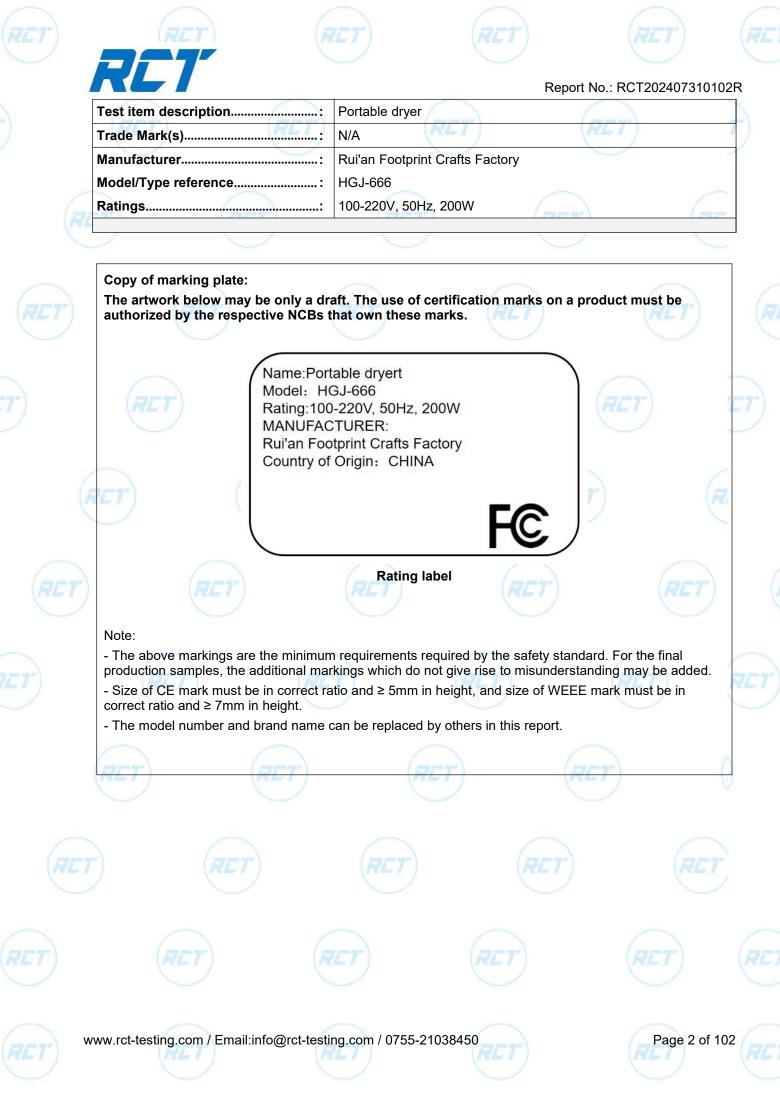


	TEST REPORT UL 60335-1 old and similar electrical appliances 1: general requirements
Report Number	RCT202407310102R
Date of issue	Aug 05, 2024
Total number of pages:	102
Testing Laboratory name:	Shenzhen RCT Testing Technology Co., Ltd.
Address:	1507, NO.8 Building, Hengda Shishang Huigu Center, Fulong Road, Shanghenglang Community, Dalang Street, Longhua District, Shenzhen, Guandong
Testing location	Same as above
Tested by (name+ signature):	Project Engine
Approved by (+ signature):	Report Seal Auto
Applicant's name:	Rui'an Footprint Crafts Factory
Address:	Songjiadai Village, Feiyun Street, Rui'an City, Wenzhou City, Zhejiang Province, China
Manufacture's name:	Rui'an Footprint Crafts Factory
Address	Songjiadai Village, Feiyun Street, Rui'an City, Wenzhou City, Zhejiang Province, China
Factory's name:	Rui'an Footprint Crafts Factory
Address	Songjiadai Village, Feiyun Street, Rui'an City, Wenzhou City, Zhejiang Province, China
Test specification:	
Standard:	UL 60335-1:2016
Test procedure:	Safety
Procedure deviation	N/A (RCT) (RCT)
Non-standard test method	N/A

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RET			Report No	: RCT20240731
	$\cap$	$\cap$		
Test item particular	s	:: (RET)	R	<b>.</b> T)
	tallation and use			
Supply Connection.		: AC connecto	or	
Possible test case v				
	apply to the test object			
	eet the requirement			
	ot meet the requiremen		$\sim$	~
	st item			
Date (s) of performa	Ince of tests	: Jul 31, 2024	- Aug 05, 2024	
General remarks:	$\frown$	$\frown$		$\frown$
	refers to additional inform		e report.	<b>7CT</b> )
"(See appended table	e)" refers to a table apper	nded to the report.		
Throughout this repo	rt a 🗌 comma / 🖂 poin	it is used as the decim	al separator.	
Summary of testing: N/A				
	<u> </u>	$\smile$	$\sim$	
General product inf	ormation and other rer			
General product inf shaver is intended for	or household and indoor	use only.		6
General product inf shaver is intended for		use only.	earance.	REI
General product inf shaver is intended for	or household and indoor	use only.	earance.	REI
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Clause	Requirement + Test	(RLI)	Result - Remark	Verdict

5	GENERAL CONDITIONS FOR THE TESTS		
<b>r</b> )	Tests performed according to clause 5, e.g. nature of supply, sequence of testing, etc.	RET	P
6	CLASSIFICATION		Р
6.1	Protection against electric shock: Class 0, 0I, I, II, III	Class III appliance	P
	Protection against electric shock© -Class II or class III for portable appliances: -Class I, class II or class III for stationary appliances 	RET	N/A
6.2	Protection against harmful ingress of water	IPX0 for indoor use only	N/A
7	MARKING AND INSTRUCTIONS		Р
7.1	Rated voltage or voltage range (V)		Р
~	Symbol for nature of supply, or		Р
ET	Rated frequency (Hz)	RET	Р
	Rated power input (W), or		N/A
	Rated current (A):		Р
	Manufacturer's or responsible vendor's name, trademark or identification mark		P
	Model or type reference		Р
	Symbol IEC 60417-5172, for class II appliances		Р
_	IP number, other than IPX0	$\langle$	N/A
RE	Symbol IEC 60417-5180, for class III appliances, unless	T) (RET)	N/A
	the appliance is operated by batteries only, or		N/A
$\frown$	for appliances powered by rechargeable batteries recharged in the appliance	$\bigcirc$	N/A
RET	Symbol IEC 60417-5018, for class II and class III appliances incorporating a functional earth	RCT	N/A
)	Symbol IEC 60417-5036, for the enclosure of electrically-operated water valves in external hose- sets for connection of an appliance to the water mains, if the working voltage exceeds extra-low voltage	RCT	N/A
7.2	Warning for stationary appliances for multiple supply		N/A
6	Warning placed in vicinity of terminal cover		N/A
7.3	Range of rated values marked with the lower and upper limits separated by a hyphen		Р

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Clause	Requirement + Test	(RLI)	Result - Remark	Verdict

	Different rated values marked with the values separated by an oblique stroke	$\bigcirc$	P
7.4	Appliances adjustable for different rated voltages or rated frequencies, the voltage or the frequency setting is clearly discernible	RET	N/A
	Requirement met if frequent changes are not required and the rated voltage to which the appliance is to be adjusted is determined from a wiring diagram	ICT RCT	N/A
7.5	Appliances with more than one rated voltage or one or more rated voltage ranges, marked with rated input or rated current for each rated voltage or range, unless	PCT	Ρ
	the power input is related to the arithmetic mean value of the rated voltage range		N/A
CT)	Relation between marking for upper and lower limits of rated power input or rated current and voltage is clear	RET	N/A
7.6	Correct symbols used	$\bigcirc$	Ρ
	Symbol for nature of supply placed next to rated voltage		Ρ
	Symbol for class II appliances placed unlikely to be confused with other marking	(RCT) (RL	P
	Units of physical quantities and their symbols according to international standardized system		Р
7.7	Connection diagram fixed to appliances to be connected to more than two supply conductors and appliances for multiple supply, unless	) RET	N/A
	correct mode of connection is obvious		N/A
7.8	Except for type Z attachment, terminals for connection indicated as follows:	to the supply mains	N/A
	- marking of terminals exclusively for the neutral conductor (letter N)		N/A
0	- marking of protective earthing terminals (symbol IEC 60417-5019)	$\frown$	N/A
)	- marking of functional earthing terminals (symbol IEC 60417-5018)	RET	N/A
	- marking not placed on removable parts		N/A
7.9	Marking or placing of switches which may cause a hazard	T) (RCT)	N/A
7.10	Indications of switches on stationary appliances and controls on all appliances by use of figures, letters or other visual means		Ρ







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Clause	Requirement + Test	RLI	Result - Remark	Verdict

	This applies also to switches which are part of a control		N/A
<b>T</b> )	If figures are used, the off position indicated by the figure 0	RET	N/A
	The figure 0 indicates only OFF position, unless no confusion with the OFF position		N/A
7.11	Indication for direction of adjustment of controls	art) (ar	N/A
7.12	Instructions for safe use provided		Р
	Details concerning precautions during user maintenance		Р
(	The instructions state that:		Р
(ne	- the appliance is not to be used by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction		P
	- children being supervised not to play with the appliance	RET	P
	For a part of class III construction supplied from a detachable power supply unit, the instructions state that the appliance is only to be used with the unit provided	(RCT) (R	N/A
	Instructions for class III appliances state that it must only be supplied at SELV, unless	$\bigcirc$	N/A
6	it is a battery-operated appliance, the battery being charged outside the appliance		N/A
(r	For appliances for altitudes exceeding 2000 m, the maximum altitude is stated :		N/A
RET	The instructions for appliances incorporating a functional earth states that the appliance incorporates an earth connection for functional purposes only	RET	N/A
	If the appliance has heated parts in contact with the skin, instructions shall include: The appliance has a heated surface. Persons insensitive to heat must be careful when using the appliance (IEC 60335-2-43)	RET	N/A
/	Instructions for appliance having a liquid container filled with water shall include: If water leaks from the appliance, the appliance should no longer be used. (IEC 60335-2-43)		N/A
7.12.1	Sufficient details for installation supplied	CT) (RCT	N/A
	For an appliance intended to be permanently connected to the water mains and not connected by a hose-set, this is stated		N/A

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Clause	Requirement + Test	(RLI)	Result - Remark	Verdict

T	If different rated voltages or different rated frequencies are marked, the instructions state what action to be taken to adjust the appliance	RET	N/A
7.12.2	Stationary appliances not fitted with means for disconnection from the supply mains having a contact separation in all poles that provide full disconnection under overvoltage category III, the instructions state that means for disconnection must be incorporated in the fixed wiring in accordance with the wiring rules	RCT RC	N/A
7.12.3	Insulation of the fixed wiring in contact with parts exceeding 50 K during clause 11; instructions state that the fixed wiring must be protected		N/A
7.12.4	Instructions for built-in appliances:	RET	N/A
$\sim$	- dimensions of space	$\sim$	N/A
	- dimensions and position of supporting and fixing		N/A
CT)	- minimum distances between parts and surrounding structure	RET	N/A
	- minimum dimensions of ventilating openings and arrangement		N/A
	- connection to supply mains and interconnection of separate components		N/A
	- allow disconnection of the appliance after installation, by accessible plug or a switch in the fixed wiring, unless		N/A
-	a switch complying with 24.3	$\langle \rangle$	N/A
7.12.5	Replacement cord instructions, type X attachment with a specially prepared cord	T) RET	N/A
	Replacement cord instructions, type Y attachment		N/A
$\sim$	Replacement cord instructions, type Z attachment	$\frown$	N/A
7.12.6	Caution in the instructions for appliances incorporating a non-self-resetting thermal cut-out that is reset by disconnection of the supply mains, if this cut-out is required to comply with the standard	RET	N/A
7.12.7	Instructions for fixed appliances stating how the appliance is to be fixed	(RET)	N/A
7.12.8	Instructions for appliances connected to the water m	ains:	N/A
	- max. inlet water pressure (Pa):		N/A
(-	- min. inlet water pressure, if necessary (Pa):		N/A
6	Instructions concerning new and old hose-sets for appliances connected to the water mains by detachable hose-sets		/ N/A

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RL	RL			
	$\sim$	~	Report No.:RC	T2024073101
(	()	UL 60335-1		
Clause	Requirement + Test	RLI	Result - Remark	Verdic
7.12.9	Instructions specified in 7.12 7.12.8 appear together befor instructions supplied with the	e any other	PET	N/A
9	These instructions may be su appliance separately from an booklet			N/A
	They may follow the descript that identifies parts, or follow drawings/sketches		RET	RL N/A
$\sim$	In addition, instructions are a alternative format such as on request from the user in a for	a website or on		N/A
REI	In addition, instructions are a alternative format such as on format such as a DVD	a website or in a		D N/A
7.13	Instructions and other texts in	n an official language	In English or/and local language	Р
7.14	Markings clearly legible and	durable:	(RET)	P
	Signal words WARNING, CA uppercase having a height as			Р
	Uppercase letter of the text e word not smaller than 1,6 mr		arr	N/A
	Moulded in, engraved, or sta raised above or have a depth at least 0,25 mm, unless			N/A
7.15	Markings on a main part	· /		P
Ri	Marking clearly discernible fr necessary after removal of a			Р
	For portable appliances, cover opened without a tool	er can be removed or		N/A
RET	For stationary appliances, na identification mark and mode visible after installation		RET	N/A
	For fixed appliances, name, tidentification mark and mode visible after installation accor	l or type reference		N/A
)	Indications for switches and on near the components. Marking an he positioned or reposition	ng not on parts which	RET	N/A

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that the marking is misleading

7.16

link

can be positioned or repositioned in such a way

The symbol IEC 60417-5018 placed next to the

Marking of a possible replaceable thermal link or

fuse link clearly visible with regard to replacing the

symbol IEC 60417-5172 or IEC 60417-5180

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Clause	Requirement + Test	RLI	Result - Remark	Verdict

8	PROTECTION AGAINST ACCESS TO LIVE PARTS	P
8.1	Adequate protection against accidental contact with live parts	<b>:</b> r) ( <b>A</b>
8.1.1	Requirement applies for all positions, detachable parts removed	N/A
	Lamps behind a detachable cover not removed, if conditions met	N/A
	Insertion or removal of lamps, protection against contact with live parts of the lamp cap	N/A
$\sim$	Use of test probe B of IEC 61032, with a force not exceeding 1 N: no contact with live parts	N/A
8.1.2	Use of test probe 13 of IEC 61032, with a force not exceeding 1 N, through openings in class 0 appliances and class II appliances/constructions: no contact with live parts	P
CT)	Test probe 13 also applied through openings in earthed metal enclosures having a non-conductive coating: no contact with live parts	N/A
8.1.3	For appliances other than class II, use of test probe 41 of IEC 61032, with a force not exceeding 1 N: no contact with live parts of visible glowing heating elements or supporting parts	P
	For a single switching action obtained by a switching device, requirements as specified	P
	For appliances with a supply cord and without a switching device, the single switching action may be obtained by the withdrawal of the plug	N/A
8.1.4	Accessible part not considered live if:	Р
	- safety extra-low a.c. voltage: peak value not exceeding 42.4 V	N
RET	- safety extra-low d.c. voltage: not exceeding 42.4 V	RCT
$\bigcirc$	- or separated from live parts by protective impedance	N/A
	If protective impedance: d.c. current not exceeding 2 mA, and	N/A
/	a.c. peak value not exceeding 0.7 mA	Р
	- for peak values over 42.4 V up to and including 450 V, capacitance not exceeding 0,1 μF	N/A
(	- for peak values over 450 V up to and including 15 kV, discharge not exceeding 45 $\mu$ C	RET N/A
	- for peak values over 15kV, the energy in the discharge not exceeding 350 mJ	N/A









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Clause	Requirement + Test	Result - Remark	Verdict

	All energized parts in foot massage appliances that use water are considered to be live parts. (IEC 60335-2-43)	RET	N/A
8.1.5	Live parts protected at least by basic insulation befor	re installation or assembly:	Р
	- built-in appliances		Р
	- fixed appliances	$\langle$	N/A
	- appliances delivered in separate units	RCT) (RC	N/A
8.2	Class II appliances and constructions constructed so that there is adequate protection against accidental contact with basic insulation and metal parts separated from live parts by basic insulation only	RET	P
C	Only possible to touch parts separated from live parts by double or reinforced insulation	$\bigcirc$	N/A
9	STARTING OF MOTOR-OPERATED APPLIANCES	6	N/A
<b>ET</b> )	Requirements and tests are specified in part 2 when necessary	(RET)	N/A
10	POWER INPUT AND CURRENT		Р
10.1	Power input at normal operating temperature, rated voltage and normal operation not deviating from rated power input by more than shown in table 1. :	(see appended table)	P
RL	If the power input varies throughout the operating cycle and the maximum value of the power input exceeds, by a factor greater than two, the arithmetic mean value of the power input occurring during a representative period, the power input is the maximum value that is exceeded for more than 10 % of the representative period	T) RET	N/A
	Otherwise the power input is the arithmetic mean value		N/A
RET	Test carried out at upper and lower limits of the ranges for appliances with one or more rated voltage ranges, unless	RET	Ρ
	the rated power input is related to the arithmetic mean value	(	N/A
10.2	Current at normal operating temperature, rated voltage and normal operation not deviating from rated current by more than shown in table 2:	(see appended table)	R
(F	If the current varies throughout the operating cycle and the maximum value of the current exceeds, by a factor greater than two, the arithmetic mean value of the current occurring during a representative period, the current is the maximum value that is exceeded for more than 10 % of the representative period	RET	N/A

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Clause	Requirement + Test	(RLT)	Result - Remark	Verdict

	Otherwise the current is the arithmetic mean value		N/A
r)	Test carried out at upper and lower limits of the ranges for appliances with one or more rated voltage ranges, unless	RET	N/A
	the rated current is related to the arithmetic mean value of the range		N/A
11	HEATING		Р
11.1	No excessive temperatures in normal use		Р
11.2	The appliance is held, placed or fixed in position as described:		Р
RET	Combined appliances are positioned as specified for motor-operated appliances(IEC 60335-2-43)	) ( <b>RCT</b> )	N/A
11.3	Temperature rises, other than of windings, determined by thermocouples		Р
-T	Temperature rises of windings determined by resistance method, unless	art	N/A
9	the windings are non-uniform or it is difficult to make the necessary connections		Р
	Where the external accessible surfaces are suitably flat and access permits, then the test probe of Figure 101 is used to measure the temperature rises of external accessible surfaces specified in Table 101. (IEC 60335-2-43)	RCT	N/A
11.4	Heating appliances operated under normal operation at 1.15 times rated power input (W) :		N/A
11.5	Motor-operated appliances operated under normal operation at most unfavourable voltage between 0.94 and 1.06 times rated voltage (V)	0.94 and 1.06 times rated voltage	Р
11.6	Combined appliances operated under normal operation at most unfavourable voltage between 0.94 and 1.06 times rated voltage (V)	$\frown$	N/A
11.7	Hand-held appliances are operated for 20min (IEC 60335-2-43)	RCT	N/A
	Other appliances are operated until steady conditions are established (IEC 60335-2-43)		N/A
11.8	Temperature rises monitored continuously and not exceeding the values in table 3	(see appended table)	REI
	and Table 101(IEC 60335-2-43)		Р
1	If the temperature rise of a motor winding exceeds the value of table 3, or	$\sim$	N/A
R	if there is doubt with regard to classification of insulation,	RET RET	N/A
	tests of Annex C are carried out		N/A

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Clause	Requirement + Test	RL I	Result - Remark	Verdict

_	Sealing compound does not flow out		F
T)	Protective devices do not operate, except	The protection device was not activated during the test. Protection device for insulation protection.	
	components in protective electronic circuits tested for the number of cycles specified in 24.1.4	$\cap$	N
	The temperature rise of parts in contact with skin or hair shall not exceed the limits specified for handles that are continuously held. (IEC 60335-2-43)	RET	N
$\bigcap$	The water temperature at the middle of the water volume shall not exceed 50 °C. (IEC 60335-2-43)		N/
MLI	For massage pads with heating elements, the temperature limits specified for heating pads in IEC 60335-2-17 apply. (IEC 60335-2-43)		N/
13	LEAKAGE CURRENT AND ELECTRIC STRENGT	H AT OPERATING	P
13.1	Leakage current not excessive and electric strength adequate	RET	F
	Heating appliances operated at 1.15 times the rated power input (W)		N/
	Motor-operated appliances and combined appliances supplied at 1.06 times the rated voltage (V)	RET	сſ
	Protective impedance and radio interference filters disconnected before carrying out the tests		F
13.2	The leakage current is measured by means of the circuit described in Figure 4 of IEC 60990:1999	T) (RET)	F
$\sim$	For class 0I appliances and class I appliances, except parts of class II construction, C may be replaced by a low impedance ammeter		N/
RET	For stationary class I appliances, except fixed appliances, the leakage current shall not exceed 0,75 mA. (IEC 60335-2-43)	RET	N/
	Leakage current measurements	(see appended table)	F
13.3	The appliance is disconnected from the supply	$\bigcirc$	P
	Electric strength tests according to table 4	(see appended table)	R4
	No breakdown during the tests		-
14	TRANSIENT OVERVOLTAGES		N/
(*	Appliances withstand the transient over-voltages to which they may be subjected	RET (RET	N/
	Clearances having a value less than specified in table 16 subjected to an impulse voltage test, the test voltage specified in table 6	(see appended table)	N/







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Clause	Requirement + Test	RLT	Result - Remark	Verdict

_	No flashover during the test, unless		N/A
r	of functional insulation if the appliance complies with clause 19 with the clearance short-circuited	RET	N/A
15	MOISTURE RESISTANCE	· · ·	Р
15.1	Enclosure provides the degree of moisture protection according to classification of the appliance	IPX0	Р
	Compliance checked as specified in 15.1.1, taking into account 15.1.2, followed by the electric strength test of 16.3		N/A
RET	No trace of water on insulation which can result in a reduction of clearances or creepage distances below values specified in clause 29	RET	N/A
15.1.1	Appliances, other than IPX0, subjected to tests as specified in IEC 60529		N/A
ICT)	Water valves containing live parts in external hoses for connection of an appliance to the water mains tested as specified for IPX7 appliances	RCT	N/A
15.1.2	Hand-held appliance turned continuously through the most unfavourable positions during the test		N/A
	Built-in appliances installed according to the instructions	(RET) (R	N/A
	Appliances placed or used on the floor or table placed on a horizontal unperforated support		N/A
RE	Appliances normally fixed to a wall and appliances with pins for insertion into socket-outlets are mounted on a wooden board	T) (RET)	N/A
	For IPX3 appliances, the base of wall mounted appliances is placed at the same level as the pivot axis of the oscillating tube		N/A
RET	For IPX4 appliances, the horizontal centre line of the appliance is aligned with the pivot axis of the oscillating tube, and	RET	N/A
)	for appliances normally used on the floor or table, the movement is limited to two times 90° for a period of 5 min, the support being placed at the level of the pivot axis of the oscillating tube	RET	N/A
/	Wall-mounted appliances, take into account the distance to the floor stated in the instructions		N/A
R	Appliances normally fixed to a ceiling are mounted underneath a horizontal unperforated support, the pivot axis of the oscillating tube located at the level of the underside of the support, and	CT) RCT	N/A











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Clause	Requirement + Test	) (RLI)	Result - Remark	Verdict

16.1	Leakage current not excessive and electric		P
16	LEAKAGE CURRENT AND ELECTRIC STRENGT		Р
1	The appliance withstands the tests of clause 16	See clause 16 table	P
	Reassembly of those parts that may have been removed		Р
/	Humidity test for 48 h in a humidity cabinet	93% R.H., 25 ° C, 48h	Р
	Detachable parts removed and subjected, if necessary, to the humidity test with the main part		P
$\bigcirc$	Checked by test Cab: Damp heat steady state in IEC 60068-2-78		Ρ
15.3	Appliances proof against humid conditions	(RCT)	Ρ
$\bigcirc$	No trace of water on insulation that can result in a reduction of clearances or creepage distances below values specified in clause 29	$\frown$	N/A
RL	The appliance withstands the electric strength test of 16.3	T) RET	N/A
6	Overfilling test with additional amount of water, over a period of 1 min (I)		N/A
	Detachable parts are removed		N/A
	Water filled foot massage are completely filled with water containing approximately 1% NaCl and are then emptied within 30s being tilted or overtuned in the most unfavourable way (IEC 60335-2-43)		N/A
CT)	Appliances incorporating an appliance inlet tested with or without an connector, whichever is most unfavourable	RET	N/A
	Appliances with type X attachment fitted with a flexible cord as described	$\frown$	N/A
RET	Spillage solution comprising water containing approximately 1 % NaCl and 0,6 % rinsing agent	RET	N/A
15.2	Spillage of liquid does not affect the electrical insulation		N/A
	However, if a part has to be removed for user maintenance and a tool is needed, this part is not removed	RET	N/A
	Detachable parts subjected to the relevant treatment with the main part		N/A
	Appliances with type X attachment fitted with a flexible cord as described	$\bigcirc$	N/A
	for IPX4 appliances, the movement of the tube is limited to two times 90° from the vertical for a period of 5 min	RET	N/A

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Clause	Requirement + Test	RLI	Result - Remark	Verdict

	Protective impedance disconnected from live parts before carrying out the tests	$\frown$	F
7	Tests carried out at room temperature and not connected to the supply	RET	(
16.2	Single-phase appliances: test voltage 1.06 times rated voltage (V):		F
	Three-phase appliances: test voltage 1.06 times rated voltage divided by $\sqrt{3}$ (V)	RCT) (RC	N/
$\sim$	For stationary class I appliances, except fixed appliances, the leakage current shall not exceed 0,75 mA(IEC 60335-2-43)		N/
RET	Leakage current measurements:	(see appended table)	F
C	Limit values doubled if:		N/
	- all controls have an off position in all poles, or		N/
r.r	- the appliance has no control other than a thermal cut-out, or	PET	N
$\mathcal{O}$	- all thermostats, temperature limiters and energy regulators do not have an off position, or	$\bigcirc$	N/
	- the appliance has radio interference filters	_	N
	With the radio interference filters disconnected, the leakage current do not exceed limits specified:	(see appended table)	N/
16.3	Electric strength tests according to table 7	(see appended table)	F
	Test voltage applied between the supply cord and inlet bushing and cord guard and cord anchorage as specified	(see appended table)	F
(	No breakdown during the tests		F
17	OVERLOAD PROTECTION OF TRANSFORMERS	AND ASSOCIATED	N
RET	No excessive temperatures in transformer or associated circuits in event of short-circuits likely to occur in normal use	(see appended table)	N
\ \	Appliance supplied with 1.06 or 0.94 times rated voltage under the most unfavourable short-circuit or overload likely to occur in normal use (V)	$\bigcirc$	N
)	Basic insulation is not short-circuited	(RET)	N
	Temperature rise of insulation of the conductors of safety extra-low voltage circuits not exceeding the relevant value specified in table 3 by more than 15 K		N
6	Temperature of the winding not exceeding the value specified in table 8	LI) RET	N

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T	However, limits do not apply to fail-safe transformers complying with sub-clause 15.5 of IEC 61558-1	RET	N/A
18	ENDURANCE		N/A
	Requirements and tests are specified in part 2 when necessary		N/A
19	ABNORMAL OPERATION		Р
19.1	The risk of fire, mechanical damage or electric shock under abnormal or careless operation obviated		Р
RET	Electronic circuits so designed and applied that a fault will not render the appliance unsafe	(see appended table)	Ρ
	Appliances incorporating heating elements subjected to the tests of 19.2 and 19.3, and		N/A
CT	if the appliance also has a control that limit the temperature during clause 11 it is subjected to the test of 19.4, and	RET	N/A
	if applicable, to the test of 19.5	$\bigcirc$	N/A
	Appliances incorporating PTC heating elements are also subjected to the test of 19.6	(	N/A
	Appliances incorporating motors subjected to the tests of 19.7 to 19.10, as applicable	(RCT) (R	ct <sup>p</sup> )
	Appliances incorporating electronic circuits subjected to the tests of 19.11 and 19.12, as applicable		Р
RL	Appliances incorporating contactors or relays subjected to the test of 19.14, being carried out before the tests of 19.11	T) (RET)	Ρ
	Appliances incorporating voltage selector switches subjected to the test of 19.15		N/A
RET	Appliances incorporating a liquid container which has to be filled by the user during normal use, test of 19.101(IEC 60335-2-43)	RET	N/A
	Unless otherwise specified, the tests are continued until a non-self-resetting thermal cut-out operates, or	arr	N/A
	until steady conditions are established	(nei)	N/A
	If a heating element or intentionally weak part becomes open-circuited, the relevant test is repeated on a second sample		N/A
19.2	Test of appliances with heating elements with restricted heat dissipation; test voltage (V), power input of 0.85 times rated power input (W)		N/A

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19.3	Test of 19.2 repeated; test voltage (V), power input of 1.24 times rated power input (W)	$\frown$	N/A
19.4	Test conditions as in clause 11, any control limiting the temperature during tests of clause 11 short-circuited	RET	N/A
19.5	Test of 19.4 repeated on Class 0I and I appliances with tubular sheathed or embedded heating elements. No short-circuiting, but one end of the element connected to the sheath	RCT RC	N/A
_	The test repeated with reversed polarity and the other end of the heating element connected to the sheath		N/A
RE	The test is not carried out on appliances intended to be permanently connected to fixed wiring and on appliances where an all-pole disconnection occurs during the test of 19.4	) RCT	N/A
19.6	Appliances with PTC heating elements tested at rated voltage, establishing steady conditions	BET	N/A
9	The working voltage of the PTC heating element is increased by 5% and the appliance is operated until steady conditions are re-established. The voltage is then increased in similar steps until 1.5 times working voltage or until the PTC heating element ruptures (V)	(RCT) (R	N/A
19.7	Stalling test by locking the rotor if the locked rotor torque is smaller than the full load torque, or		Р
1	locking moving parts of other appliances	$\sim$	Р
R	Locked rotor, capacitors open-circuited one at a time	T) (RET)	N/A
_	Test repeated with capacitors short-circuited one at a time, unless		N/A
	capacitor is of class S2or S3 of IEC 60252-1		N/A
	Appliances with timer or programmer supplied with rated voltage for each of the tests, for a period equal to the maximum period allowed	RLI	Ρ
	An electronic timer or programmer that operates to ensure compliance with the test before the maximum period under the conditions of Clause 11 is reached, is a protective electronic circuit	RET	N/A
	Other appliances supplied with rated voltage for a period as specified		N/A
6	Winding temperatures not exceeding values specified in table 8	(see appended table)	Р









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Clause	Requirement + Test	REI	Result - Remark	Verdict

7	Appliances intended to be used under the feet of a sitting person, massage pads, chairs and beds are operated until steady conditions are established (IEC 60335-2-43)	RET	N/A
	Other appliances are operated for 30 s (IEC 60335-2-43)		N/A
19.8	Multi-phase motors operated at rated voltage with one phase disconnected	RCT RC	N/A
19.9	Running overload test on appliances incorporating motors intended to be remotely or automatically controlled or liable to be operated continuously		N/A
RE	Motor-operated and combined appliances for which 30.2.3 is applicable and that use overload protective devices relying on electronic circuits to protect the motor windings, are also subjected to the test	) RCT	N/A
cr)	Winding temperatures not exceeding values as specified	(see appended table)	N/A
19.10	Series motor operated at 1.3 times rated voltage for 1 min (V)	$\Theta$	N/A
	During the test, parts not being ejected from the appliance	$\frown$	N/A
	Test is also made with detachable parts in place (IEC 60335-2-43)	RET	N/A
19.11	Electronic circuits, compliance checked by evaluation of the fault conditions specified in 19.11.2 for all circuits or parts of circuits, unless		Р
R	they comply with the conditions specified in 19.11.1	T) (RCT)	N/A
_	Appliances incorporating an electronic circuit that relies upon a programmable component to function correctly, subjected to the test of 19.11.4.8, unless		N/A
RET	restarting does not result in a hazard	PCT	N/A
$\bigcirc$	Appliances having a device with an off position obtained by electronic disconnection, or a device placing the appliance in a stand-by mode, subjected to the tests of 19.11.4		P
)	If the safety of the appliance under any of the fault conditions depends on the operation of a miniature fuse-link complying with IEC 60127, the test of 19.12 is carried out	RET	RPI
	During and after each test the following is checked:	$\sim$	Р
(	- the temperature of the windings do not exceed the values specified in table 8	ET (RET	Р
	- the appliance complies with the conditions specified in 19.13		Р









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Clause	Requirement + Test	(RLI)	Result - Remark	Verdict	

	- any current flowing through protective impedance not exceeding the limits specified in 8.1.4	$\bigcirc$	P
<i>T</i> )	If a conductor of a printed board becomes open-circu considered to have withstood the particular test, pro- conditions are met:		N/A
	- the base material of the printed circuit board withstands the test of Annex E		N/A
	- any loosened conductor does not reduce clearance or creepage distances between live parts and accessible metal parts below the values specified in clause 29	RET	N/A
19.11.1	Fault conditions a) to g) in 19.11.2 are not applied to meeting both of the following conditions:	circuits or parts of circuits	Ρ
	- the electronic circuit is a low-power circuit, that is, the maximum power at low-power points does not exceed 15 W according to the tests specified		N/A
CT)	- the protection against electric shock, fire hazard, mechanical hazard or dangerous malfunction of other parts of the appliance does not rely on the correct functioning of the electronic circuit	RET	Р
19.11.2	Fault conditions applied one at a time, the appliance specified in clause 11, but supplied at rated voltage, specified:		P
	a) short circuit of functional insulation if clearances or creepage distances are less than the values specified in clause 29	$\bigcirc$	N/A
6	b) open circuit at the terminals of any component	01	Р
RL	c) short circuit of capacitors, unless	Short circuit C1, C2	Р
1	they comply with IEC 60384-14		N/A
$\frown$	d) short circuit of any two terminals of an electronic component, other than integrated circuits	Short circuit D1 Short circuit R2	Ρ
RET	This fault condition is not applied between the two circuits of an optocoupler	RET	N/A
	e) failure of triacs in the diode mode		N/A
	f) failure of microprocessors and integrated circuits	$\langle$	N/A
	g) failure of an electronic power switching device	(RCT)	N/A
	Each low power circuit is short-circuited by connecting the low-power point to the pole of the supply source from which the measurements were made		N/A
19.11.3	If the appliance incorporates a protective electronic circuit that operates to ensure compliance with clause 19, the appliance is tested as specified		N/A

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## RET

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19.11.4	Appliances having a device with an off position obtained by electronic disconnection, or	$\frown$	N/A
<b>T</b> )	a device that can be placed in the stand-by mode,	( <i>RET</i> )	N/A
	subjected to the tests of 19.11.4.1 to 19.11.4.7, the device being set in the off position or in the stand- by mode		N/A
	Appliances incorporating a protective electronic circuit subjected to the tests of 19.11.4.1 to 19.11.4.7, the tests being carried out after the protective electronic circuit has operated, except that	RCT	N/A
RET	appliances operated for 30 s or 5 min during the test of 19.7 are not subjected to the tests for electromagnetic phenomena.	) RCT	N/A
	Surge protective devices disconnected, unless		N/A
	They incorporate spark gaps	$\frown$	N/A
19.11.4.1	The appliance is subjected to electrostatic discharges in accordance with IEC 61000-4-2, test level 4	RET	N/A
19.11.4.2	The appliance is subjected to radiated fields in accordance with IEC 61000-4-3, at frequency ranges specified	(BFT)	N/A
19.11.4.3	The appliance is subjected to fast transient bursts in accordance with IEC 61000-4-4, test level 3 or 4 as specified	(a.) (a	N/A
19.11.4.4	The power supply terminals of the appliance subjected to voltage surges in accordance with IEC 61000-4-5, test level 3 or 4 as specified	T) (RCT)	N/A
	An open circuit test voltage of 2 kV is applicable for the line-to-line coupling mode		N/A
RET	An open circuit test voltage of 4 kV is applicable for the line-to-earth coupling	RET	N/A
$\bigcirc$	Earthed heating elements in class I appliances disconnected		N/A
19.11.4.5	The appliance is subjected to injected currents in accordance with IEC 61000-4-6, test level 3	$\bigcirc$	N/A
19.11.4.6	Appliances having a rated current not exceeding 16 A are subjected to the Class 3 voltage dips and interruptions in accordance with IEC 61000-4-11	RET	N/A
R	Appliances having a rated current exceeding 16 A are subjected to the Class 3 voltage dips and interruptions in accordance with IEC 61000-4-34		N/A
19.11.4.7	The appliance is subjected to mains signals in accordance with IEC 61000-4-13, test level class 2		N/A









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Clause	Requirement + Test	(RLI)	Result - Remark	Verdict

19.11.4.8	The appliance is supplied at rated voltage and operated under normal operation. After 60s the power supply is reduced to a level such that the appliance ceases to respond or parts controlled by the programmable component cease to operate	RET	N/A
	The appliance continues to operate normally, or		N/A
	requires a manual operation to restart	$\frown$	N/A
19.12	If the safety of the appliance for any of the fault conditions specified in 19.11.2 depends on the operation of a miniature fuse-link complying with IEC 60127, the test is repeated, measuring the current flowing through the fuse-link; measured current (A); rated current of the fuse-link (A)	During the tests, the appliance did not emit flames, molten metal, poisonous or ignitable gas	N/A
19.13	During the tests the appliance does not emit flames, molten metal, poisonous or ignitable gas in hazardous amounts		Ρ
cr	Temperature rises not exceeding the values shown in table 9	(see appended table)	P
	Compliance with clause 8 not impaired		Р
	If the appliance can still be operated it complies with 20.2		N/A
	Insulation, other than of class III appliances or class contain live parts, withstands the electric strength te specified in table 4:		CP)
	contain live parts, withstands the electric strength te		P
	contain live parts, withstands the electric strength te specified in table 4:	st of 16.3, the test voltage as	P
RL	contain live parts, withstands the electric strength te specified in table 4: - basic insulation (V) - supplementary insulation (V)	st of 16.3, the test voltage as	P N/A
R	contain live parts, withstands the electric strength te specified in table 4: - basic insulation (V)	st of 16.3, the test voltage as	P N/A
RET	<ul> <li>contain live parts, withstands the electric strength terspecified in table 4:</li> <li>basic insulation (V)</li></ul>	st of 16.3, the test voltage as	P N/A N/A
RET	contain live parts, withstands the electric strength te specified in table 4: - basic insulation (V): - supplementary insulation (V): - reinforced insulation (V): During the test of 19.101, the temperature rise of the surface of the container shall not exceed 60 K. (IEC 60335-2-43) After operation or interruption of a control, clearances and creepage distances across the functional insulation withstand the electric strength test of 16.3, the test voltage being twice the	st of 16.3, the test voltage as	P N/A N/A P
RET	contain live parts, withstands the electric strength te specified in table 4: - basic insulation (V): - supplementary insulation (V): - reinforced insulation (V): During the test of 19.101, the temperature rise of the surface of the container shall not exceed 60 K. (IEC 60335-2-43) After operation or interruption of a control, clearances and creepage distances across the functional insulation withstand the electric strength test of 16.3, the test voltage being twice the working voltage The appliance does not undergo a dangerous	st of 16.3, the test voltage as	P N/A N/A P
RET	contain live parts, withstands the electric strength te specified in table 4: - basic insulation (V) - supplementary insulation (V) - reinforced insulation (V) During the test of 19.101, the temperature rise of the surface of the container shall not exceed 60 K. (IEC 60335-2-43) After operation or interruption of a control, clearances and creepage distances across the functional insulation withstand the electric strength test of 16.3, the test voltage being twice the working voltage The appliance does not undergo a dangerous malfunction, and no failure of protective electronic circuits, if the	st of 16.3, the test voltage as	P N/A N/A P N/A
	contain live parts, withstands the electric strength te specified in table 4: - basic insulation (V) - supplementary insulation (V) - reinforced insulation (V) During the test of 19.101, the temperature rise of the surface of the container shall not exceed 60 K. (IEC 60335-2-43) After operation or interruption of a control, clearances and creepage distances across the functional insulation withstand the electric strength test of 16.3, the test voltage being twice the working voltage The appliance does not undergo a dangerous malfunction, and no failure of protective electronic circuits, if the appliances tested with an electronic switch in the off	st of 16.3, the test voltage as	P N/A N/A P N/A







### RLI

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Clause	Requirement + Test	(RLI)	Result - Remark	Verdict

	If the appliance contains lids or doors that are controlled by one or more interlocks, one of the interlocks may be released provided that:	N/A
<b>T</b> )	- the lid or door does not move automatically to an open position when the interlock is released, and	N/A
	- the appliance does not start after the cycle in which the interlock was released	N/A
19.14	Appliances operated under the conditions of clause 11, any contactor or relay contact operating under the conditions of clause 11 being short-circuited	N/A
	For a relay or contactor with more than one contact, all contacts are short-circuited at the same time	N/A
AL I	A relay or contactor operating only to ensure the appliance is energized for normal use is not short- circuited	N/A
	If more than one relay or contactor operates in clause 11, they are short-circuited in turn	N/A
19.15	For appliances with a mains voltage selector switch, the switch is set to the lowest rated voltage position and the highest value of rated voltage is applied	N/A
19.101	Appliances incorporating a liquid container that has to be filled by the user are supplied at rated voltage and operated without liquid. (IEC 60335-2-43)	N/A
20	STABILITY AND MECHANICAL HAZARDS	Р
20.1	Appliances having adequate stability	P
RE	Tilting test through an angle of 10°, appliance placed on an inclined plane/horizontal support, not connected to the supply mains; appliance shall not overturn	Р
	unless the appliance or part of the appliance which overturns complies with all of the described conditions (IEC 60335-2-43)	N/A
	Tilting test repeated on appliances with heating elements, angle of inclination increased to 15°	N/A
	Possible heating test in overturned position; temperature rise does not exceed values shown in table 9	N/A
/	Hand-held appliances are subjected to the test while placed on their charging stands. (IEC 60335-2-43)	N/A
20.2	Moving parts adequately arranged or enclosed as to provide protection against personal injury adequately	Р
C	Protective enclosures, guards and similar parts are non-detachable, and	Р









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Clause	Requirement + Test	RLI	Result - Remark	Verdict

	Enclosures that can be opened by overriding an interlock are considered to be detachable parts	$\bigcirc$	P
<b>T</b> )	Self- resetting thermal cut- outs and overcurrent protective devices not causing a hazard by unexpected closure	RET	N/A
	Not possible to touch dangerous moving parts with the test probe described	$\bigcirc$	P
21	MECHANICAL STRENGTH	RCT) (RC	Р
21.1	Appliance has adequate mechanical strength and is constructed as to withstand rough handling	$\sim$	Р
RET	Checked by applying 3 blows to every point of the enclosure like to be weak, in accordance with test Ehb of IEC 60068-2-75, spring hammer test, with an impact energy of 0,5 J	RET	Ρ
	The appliance shows no damage impairing compliance with this standard, and	(	Р
<b>"CT</b> )	compliance with 8.1, 15.1 and clause 29 not impaired	RET	P
	If doubt, supplementary or reinforced insulation subjected to the electric strength test of 16.3		N/A
	If necessary, repetition of groups of three blows on a new sample	RET	N/A
	Appliances intended to be used under the feet of a sitting person are loaded as specified for normal operation but with the mass increased to 90kg. The mass is applied for 30s. (IEC 60335-2-43)		Р
RE	Hand-held parts of appliances are also subjected to the test of 21.101. (IEC 60335-2-43)	T) (RET)	N/A
21.2	Accessible parts of solid insulation having strength to prevent penetration by sharp implements		N/A
RET	Test not applicable if the thickness of supplementary insulation is at least 1 mm and reinforced insulation at least 2 mm	RET	N/A
	The insulation is tested as specified, and does withstand the electric strength test of 16.3	(	N/A
21.101	Test described (IEC 60335-2-43)	art	N/A
)	The appliance shall not be damaged to such an extent that compliance with 8.1 and Clause 29 is impaired.		N/A
22	CONSTRUCTION		Р
22.1	Appliance marked with the first numeral of the IP system, relevant requirements of IEC 60529 are fulfilled	CT) (RET	N/A

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22.2	Stationary appliance: means to ensure all-pole disco provided:	nnection from the supply being	N/A
<b>T</b> )	- a supply cord fitted with a plug, or	( <i>RET</i> )	N/A
	- a switch complying with 24.3, or	$\bigcirc$	N/A
	- a statement in the instruction sheet that a disconnection incorporated in the fixed wiring is to be provided, or		N/A
	- an appliance inlet		N/A
RET	Singe-pole switches and single-pole protective devices for the disconnection of heating elements in single-phase, permanently connected class 01 and class I appliances, connected to the phase conductor	RET	N/A
22.3	Appliance provided with pins: no undue strain on socket-outlets	$\sim$	Ρ
	Applied torque not exceeding 0.25 Nm	$\bigcirc$	N/A
	Pull force of 50N to each pin after the appliance has being placed in the heating cabinet; when cooled to room temperature the pins are not displaced by more than 1mm	RET	N/A
	Each pin subjected to a torque of 0.4Nm; the pins are not rotating, unless	RET	N/A
	rotating does not impair compliance with this standard		N/A
22.4	Appliance for heating liquids and appliance causing undue vibration not provided with pins for insertion into socket-outlets	T) (RET)	N/A
22.5	No risk of electric shock when touching pins, for appliances having a capacitor with rated capacitance equal to or greater than $0,1\mu$ F, the appliance being disconnected from the supply at the instant of voltage peak	RET	N/A
$\bigcirc$	Voltage not exceeding 34 V (V):	$\bigcirc$	N/A
X.	If compliance relies on the operation of an electronic circuit, the electromagnetic phenomena tests of 19.11.4.3 and 19.11.4.4 are applied	$\left(\right)$	N/A
)	The discharge test is then repeated three times, voltage not exceeding 34 V (V):	RET	N/A
22.6	Electrical insulation not affected by condensing water or leaking liquid	$\sim$	N/A
R	Electrical insulation of Class II appliances not affected if a hose ruptures or seal leaks	ICT) (RCT	N/A
	In case of doubt, test as described		N/A

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Clause	Requirement + Test	RLI	Result - Remark	Verdict

22.7	Adequate safeguards against the risk of excessive pressure in appliances containing liquid or gases or having steam-producing devices	AFT	N/A
22.8	Electrical connections not subject to pulling during cleaning of compartments to which access can be gained without the aid of a tool, and that are likely to be cleaned in normal use		N/A
22.9	Insulation, internal wiring, windings, commutators and slip rings not exposed to oil, grease or similar substances, unless	RCT RC	Г
	the substance has adequate insulating properties		Р
22.10	Not possible to reset voltage-maintained non-self- resetting thermal cut-outs by the operation of an automatic switching device incorporated within the appliance, if:	) RET	N/A
	- a non-self-resetting thermal cut-out is required by the standard, and	$\bigcirc$	N/A
CT)	- a voltage maintained non-self-resetting thermal cut-out is used to meet it	RET	N/A
	Non-self-resetting thermal motor protectors have a trip-free action, unless		N/A
	they are voltage maintained	(arr) (a	N/A
	Reset buttons of non-self-resetting controls so located or protected that accidental resetting is unlikely		N/A
22.11	Reliable fixing of non-detachable parts that provide the necessary degree of protection against electric shock, moisture or contact with moving parts	T) (RCT)	Ρ
~	Obvious locked position of snap-in devices used for fixing such parts		N/A
RET	No deterioration of the fixing properties of snap-in devices used in parts that are likely to be removed during installation or servicing	RET	Ρ
$\smile$	Tests as described	$\sim$	Р
22.12	Handles, knobs etc. fixed in a reliable manner, if loosening result in a hazard	$\bigcirc$	N/A
)	Removing or fixing in wrong position of handles, knobs etc. indicating position of switches or similar components not possible, if resulting in a hazard	RET	N/A
(	A choking hazard does not apply to appliances for commercial use		N/A
(	Axial force 15 N applied to parts, the shape being so that an axial pull is unlikely to be applied	ET RET	N/A









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Clause	Requirement + Test	(RLI)	Result - Remark	Verdict

	Axial force 30 N applied to parts, the shape being so that an axial pull is likely to be applied	$\frown$	N/A
<i>r</i> )	If the part is removed and can be contained within the small parts cylinder, it is considered to be a choking hazard	RET	N/A
22.13	Unlikely that handles, when gripped as in normal use, make the operator's hand touch parts having a temperature rise exceeding the value specified for handles which are held for short periods only	RCT RC	N/A
22.14	No ragged or sharp edges creating a hazard for the user in normal use, or during user maintenance		Р
RET	No exposed pointed ends of self-tapping screws or other fasteners, likely to be touched by the user in normal use or during user maintenance	) RCT	Ρ
22.15	Storage hooks and the like for flexible cords smooth and well rounded		N/A
22.16	Automatic cord reels cause no undue abrasion or damage to the sheath of the flexible cord, no breakage of conductors strands and no undue wear of contacts	RET	N/A
	Cord reel tested with 6000 operations, as specified		N/A
	Electric strength test of 16.3, voltage of 1010 V applied	(RET) (R	N/A
22.17	Spacers not removable from the outside by hand or by means of a screwdriver or a spanner		N/A
22.18	Current-carrying parts and other metal parts resistant to corrosion	T) DET	Р
22.19	Driving belts not relied upon to provide the required level of insulation, unless		N/A
	constructed to prevent inappropriate replacement		N/A
22.20	Direct contact between live parts and thermal insulation effectively prevented, unless	RET	Ρ
$\bigcirc$	material used is non-corrosive, non-hygroscopic and non-combustible	$\bigcirc$	Ρ
22.21	Wood, cotton, silk, ordinary paper and fibrous or hygroscopic material not used as insulation, unless	ACT	P
/	impregnated		N/A
(	This requirement does not apply to magnesium oxide and mineral ceramic fibres used for the electrical insulation of heating elements		N/A
22.22	Appliances not containing asbestos	ET) (RET	Р
22.23	Oils containing polychlorinated biphenyl (PCB) not used		Ρ

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22.24	Bare heating elements, except in class III appliances or class III constructions that do not contain live parts, adequately supported	art	N/A
9	In case of rupture, the heating conductor is unlikely to come in contact with accessible metal parts	$\overline{\mathbf{O}}$	N/A
22.25	Sagging heating conductors, except in class III appliances or class III constructions that do not contain live parts, cannot come into contact with accessible metal parts	RCT RC	N/A
22.26	For class III constructions the insulation between parts operating at safety extra-low voltage and other live parts complies with the requirements for double or reinforced insulation	art	N/A
22.27	Parts connected by protective impedance separated by double or reinforced insulation		Р
22.28	Metal parts of Class II appliances conductively connected to gas pipes or in contact with water, separated from live parts by double or reinforced insulation	RET	P
22.29	Class II appliances permanently connected to fixed wiring so constructed that the required degree of access to live parts is maintained after installation		N/A
22.30	Parts serving as supplementary or reinforced insulation fixed so that they cannot be removed without being seriously damaged, or	RET	N/A
RI	so constructed that they cannot be replaced in an incorrect position, and so that if they are omitted, the appliance is rendered inoperable or manifestly incomplete	r) (RCT)	N/A
22.31	Neither clearances nor creepage distances over supplementary and reinforced insulation reduced below values specified in clause 29 as a result of wear		P
RE	Neither clearances nor creepage distances between live parts and accessible parts reduced below values for supplementary insulation if wires, screws etc. become loose	RET	Р
22.32	Supplementary and reinforced insulation constructed or protected against pollution so that clearances or creepage distances are not reduced below the values in clause 29	RCT	N/A
(	Supplementary insulation of natural or synthetic rubber resistant to ageing, or arranged and dimensioned so that creepage distances are not reduced below values specified in 29.2		N/A

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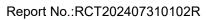
		UL 60335-1		
Clause	Requirement + Test	RLI	Result - Remark	Verdict

	Ceramic material not tightly sintered, similar materials or beads alone not used as supplementary or reinforced insulation	RET	N/A
	Ceramic and similar porous material in which heating conductors are embedded is considered to be basic insulation, not reinforced insulation		N/A
	Oxygen bomb test at 70 °C for 96 h and 16 h at room temperature	RCT RC	N/A
22.33	Conductive liquids that are or may become accessible in normal use and conductive liquids that are in contact with unearthed accessible metal parts are not in direct contact with live parts, or		N/A
REI	unearthed metal parts separated from live parts by basic insulation only		N/A
	Electrodes not used for heating liquids		N/A
cr	For class II constructions, conductive liquids that are or may become accessible in normal use and conductive liquids that are in contact with unearthed accessible metal parts, not in direct contact with basic or reinforced insulation, unless	RCT	N/A
	the reinforced insulation consists of at least 3 layers		N/A
	For class II constructions, conductive liquids which are in contact with live parts, not in direct contact with reinforced insulation, unless	RET	N/A
G	the reinforced insulation consists of at least 3 layers		N/A
R	An air layer not used as basic or supplementary insulation in a double insulation system if likely to be bridged by leaking liquid		N/A
22.34	Shafts of operating knobs, handles, levers etc. not live, unless		N/A
	the shaft is not accessible when the part is removed	RLI	N/A
22.35	For other than class III constructions, handles, levers and knobs, held or actuated in normal use, not becoming live in the event of a failure of basic insulation	RET	N/A
(F	Such parts being of metal, and their shafts or fixings are likely to become live in the event of a failure of basic insulation, are either adequately covered by insulation material or their accessible parts are separated from their shafts or fixings by supplementary insulation	ICT) RCT	N/A









		UL 60335-1		
Clause	Requirement + Test	RLI	Result - Remark	Verdict

	This requirement does not apply to handles, levers		N/A
	and knobs on stationary appliances and cordless appliances, other than those of electrical components, provided they are reliably connected to an earthing terminal or earthing contact, or separated from live parts by earthed metal	RET	
	Insulating material covering metal handles, levers and knobs withstand the electric strength test of 16.3 for supplementary insulation	RCT (RE	N/A
22.36	For appliances other than class III, handles continuously held in the hand in normal use so constructed that when gripped as in normal use, the operators hand is not likely to touch metal parts, unless	RCT	N/A
$\bigcirc$	they are separated from live parts by double or reinforced insulation		N/A
22.37	Capacitors in Class II appliances not connected to accessible metal parts and their casings, if of metal, separated from accessible metal parts by supplementary insulation, unless	RET	P
	the capacitors comply with 22.42		N/A
22.38	Capacitors not connected between the contacts of a thermal cut-out		N/A
22.39	Lamp holders used only for the connection of lamps		N/A
22.40	Motor-operated appliances and combined appliances intended to be moved while in operation, or having accessible moving parts, fitted with a switch to control the motor. The actuating member of the switch being easily visible and accessible	T) RCT	Ρ
RET	If the appliance cannot operate continuously, automatically or remotely without giving rise to a hazard, appliances for remote operation being fitted with a switch for stopping the operation. The actuating member of the switch being easily visible and accessible	RET	P
22.41	No components, other than lamps, containing mercury	art	P
22.42	Protective impedance consisting of at least two separate components	0	Р
	Values specified in 8.1.4 not exceeded if any one of the components are short-circuited or open-circuited	ET RET	Р
6	Resistors checked by the test of 14.1 a) in IEC 60065		N/A









		UL 60335-1		
Clause	Requirement + Test	(RLT)	Result - Remark	Verdict

	Capacitors checked by the tests for class Y capacitors in IEC 60384-14	P
22.43	Appliances adjustable for different voltages, accidental changing of the setting of the voltage unlikely to occur	N/A
22.44	Appliances not having an enclosure that is shaped or decorated like a toy	P
22.45	When air is used as reinforced insulation, clearances not reduced below the values specified in 29.1.3 due to deformation as a result of an external force applied to the enclosure	N/A
22.46	For programmable protective electronic circuits used to ensure compliance with the standard, the software contains measures to control the fault/error conditions in table R.1	N/A
<b>cr</b> )	Software that contains measures to control the fault/error conditions specified in table R.2 is to be specified in parts 2 for particular constructions or to address specific hazards	N/A
	These requirements are not applicable to software used for functional purpose or compliance with clause 11	N/A
22.47	Appliances connected to the water mains withstand the water pressure expected in normal use	N/A
	No leakage from any part, including any inlet water hose	N/A
22.48	Appliances connected to the water mains constructed to prevent backsiphonage of non- potable water	N/A
22.49	For remote operation, the duration of operation is to be set before the appliance can be started, unless	N/A
RET	the appliance switches off automatically or can operate continuously without hazard	N/A
22.50	Controls incorporated in the appliance take priority over controls actuated by remote operation	N/A
22.51	There is a control on the appliance manually adjusted to the setting for remote operation before the appliance can be operated in this mode	N/A
	There is a visual indication showing that the appliance is adjusted for remote operation	N/A
R	These requirements not necessary on appliances that can operate as follows, without giving rise to a hazard:	N/A
	- continuously, or	N/A
	- automatically, or	N/A

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Clause	Requirement + Test	Result - Remark	Verdict

-	- remotely	(	N/A
22.52	Socket-outlets on appliances accessible to the user in accordance with the socket-outlet system used in the country in which the appliance is sold	RET	N/A
22.53	Class II appliances and class III appliances that incorporate functionally earthed parts have at least double insulation or reinforced insulation between live parts and the functionally earthed parts	RET	P
22.54	Button cells and batteries designated R1 not accessible without the aid of a tool, unless		N/A
RET	the cover of their compartment can only be opened after at least two independent movements have been applied simultaneously	RET	N/A
22.55	Devices operated to stop the intended function of the appliance, if any, are be distinguished from other manual devices by means of shape, size, surface texture or position		N/A
	The requirement concerning position does not preclude use of a push on push off switch	RET	N/A
	An indication when the device has been operated is	given by:	N/A
	<ul> <li>tactile feedback from the actuator or from the appliance, or</li> </ul>		N/A
	- reduction in heat output; or		N/A
	– audible and visible feedback	$\sim$	N/A
22.56	Detachable power supply part provided with the part of class III construction		N/A
22.57	The properties of non-metallic materials do not degrade from exposure to UV-C radiation, as specified in Annex T		N/A
757	This requirement does not apply to glass, ceramics or similar materials	arr	N/A
22.101	Appliance shall be constructed so that hair cannot be drawn into appliance or be entangled in moving parts (IEC 60335-2-43)	R	N/A
22.102	Appliance that use water and I which air is circulated shall be constructed so that the water cannot penetrate into contact with live parts or basic insulation (IEC 60335-2-43)	RCT	N/A
23	INTERNAL WIRING		Р
23.1	Wireways smooth and free from sharp edges		Р
(F	Wires protected against contact with burrs, cooling fins etc.		Р
	Wire holes in metal well-rounded or provided with bushings		Р









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Clause	Requirement + Test	(RLI)	Result - Remark	Verdict

	Wiring effectively prevented from coming into contact with moving parts	$\frown$	P
23.2	Beads etc. on live wires cannot change their position, and are not resting on sharp edges	RLT	N/A
	Beads inside flexible metal conduits contained within an insulating sleeve		N/A
23.3	Electrical connections and internal conductors movable relatively to each other not exposed to undue stress	RCT RE	P
(	Flexible metallic tubes not causing damage to insulation of conductors		N/A
RET	Open-coil springs not used	ACT	N/A
0	Adequate insulating lining provided inside a coiled spring, the turns of which touch one another		N/A
	No damage after 10 000 flexings for conductors flexed during normal use, or		N/A
	100 flexings for conductors flexed during user maintenance	RET	N/A
	Electric strength test of 16.3, 1000 V between live parts and accessible metal parts		N/A
	Not more than 10% of the strands of any conductor broken, and	(RCT) (R	N/A
	not more than 30% for wiring supplying circuits that consume no more than 15W	$\sim$	N/A
23.4	Bare internal wiring sufficiently rigid and fixed	$\langle \rangle$	N/A
23.5	The insulation of internal wiring subjected to the supply mains voltage withstanding the electrical stress likely to occur in normal use		N/A
RET	Basic insulation electrically equivalent to the basic insulation of cords complying with IEC 60227 or IEC 60245, or	RET	N/A
$\bigcirc$	no breakdown when a voltage of 2000 V is applied for 15 min between the conductor and metal foil wrapped around the insulation		N/A
)	For class II construction, the requirements for supplementary insulation and reinforced insulation apply,	RET	N/A
	except that the sheath of a cord complying with IEC 60227 or IEC 60245 may provide supplementary insulation.	$\sim$	N/A
R	A single layer of internal wiring insulation does not provide reinforced insulation	CT) (RCT	N/A







### RL I

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Clause	Requirement + Test	(RL I)	Result - Remark	Verdict	

23.6	Sleeving used as supplementary insulation on internal wiring retained in position by clamping at	$\bigcirc$	N/A
·7 )	both ends, or provide the second s	(RET)	RE
	be such that it can only be removed by breaking or cutting	$\bigcirc$	N/A
23.7	The colour combination green/yellow only used for earthing conductors	$\frown$	N/A
23.8	Aluminium wires not used for internal wiring	(RCT) (RL	Р
23.9	Stranded conductors not consolidated by soldering where they are subjected to contact pressure, unless		N/A
RET	the contact pressure is provided by spring terminals	) ( <b>RCT</b> )	N/A
23.10	The insulation and sheath of internal wiring, incorporated in external hoses for the connection of an appliance to the water mains, at least equivalent to that of light polyvinyl chloride sheathed flexible cord (60227 IEC 52)	RCT	N/A
24	COMPONENTS		Р
24.1	Components comply with safety requirements in relevant IEC standards	$\sim$	Р
	List of components:	(see appended table)	Р
	Motors not required to comply with IEC 60034-1, they are tested as part of the appliance		Р
~	Relays tested as part of the appliance, or	$\sim$	N/A
RE	alternatively acc. to IEC 60730-1, and meeting the additional requirements in IEC 60335-1	T) (RCT)	N/A
$\sim$	The requirements of Clause 29 apply between live parts of components and accessible parts of the appliance		N/A
RET	Components can comply with the requirements for clearances and creepage distances for functional insulation in the relevant component standard	RET	N/A
)	30.2 of this standard apply to parts of non-metallic material in components including parts of non- metallic material supporting current-carrying connections	RET	RCT
	Components that have not been previously tested to comply with the IEC standard for the relevant component are tested according to the requirements of 30.2		Р

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Clause	Requirement + Test	RLI	Result - Remark	Verdict

RCT	)	Components that have been previously tested to comply with the resistance to fire requirements in the IEC standard for the relevant component need not be retested provided the specified conditions are met	RET	RE
		If these conditions are not satisfied, the component is tested as part of the appliance.	$\sim$	Р
<b>(</b> )		Power electronic converter circuits not required to comply with IEC 62477-1, they are tested as part of the appliance	RCT	N/A
	RET	If components have not been tested and found to comply with relevant IEC standard for the number of cycles specified, they are tested in accordance with 24.1.1 to 24.1.9	RCT	N/A
		For components mentioned in 24.1.1 to 24.1.9 no additional tests specified in the relevant component standard are necessary other than those specified in 24.1.1 to 24.1.9		N/A
AL	9	Components not tested and found to comply with relevant IEC standard and components not marked or not used in accordance with its marking, tested under the conditions occurring in the appliance	RET	N/A
cr		Lampholders and starterholders that have not being tested and found to comply with the relevant IEC standard, tested as a part of the appliance and additionally according to the gauging and interchangeability requirements of the relevant IEC standard	RET	N/A
	RL	No additional tests specified for nationally standardized plugs such as those detailed in IEC/TR 60083 or connectors complying with the standard sheets of IEC 60320-1 and IEC 60309	T) (RET)	N/A
(	4.1.1	Capacitors likely to be permanently subjected to the supply voltage and used for radio interference suppression or for voltage dividing, complying with IEC 60384-14	RET	N/A
		If the capacitors have to be tested, they are tested according to Annex F		N/A
24	4.1.2	Transformers in associated switch mode power supplies comply with Annex BB of IEC 61558-2-16	(RCT)	N/A
		Safety isolating transformers complying with IEC 61558-2-6		N/A
	G	If they have to be tested, they are tested according to Annex G		N/A
24	4.1.3	Switches complying with IEC 61058-1, the number of cycles of operation being at least 10 000	$\mathbf{O}$	N/A











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Clause	Requirement + Test	) (RLT)	Result - Remark	Verdict

	If they have to be tested, they are tested to Annex H	according		N/A
<i>T</i> )	If the switch operates a relay or contacto complete switching system is subjected t		RET	N/A
	If the switch only operates a motor starin complying with IEC 60730-2-10 with the cycles of a least 10 000 as specified, the switching system need not be tested	number of	T	N/A
24.1.4	Automatic controls complying with IEC 60 number of cycles of operation being at le		elevant part 2. The	N/A
~	- thermostats:	10 000	_	N/A
(art	- temperature limiters:	1 000	Pr	N/A
C	- self-resetting thermal cut-outs:	300	(c	N/A
	- voltage maintained non-self- resetting thermal cut-outs:	1 000	$\frown$	N/A
ET)	- other non-self-resetting thermal cut-outs:	30	RET	N/A
	- timers:	3 000		N/A
	- energy regulators:	10 000	$\frown$	N/A
	The number of cycles for controls operat clause 11 need not be declared, if the ap meets the requirements of this standard are short-circuited	pliance	ICT)	CN/A
RL	Thermal motor protectors are tested in co with their motor under the conditions spe Annex D		R	N/A
RET	For water valves containing live parts and incorporated in external hoses for connect appliance to the water mains, the degree protection declared for subclause 6.5.2 of 60730-2-8 is IPX7	ction of an of	RET	N/A
$\bigcirc$	Thermal cut-outs of the capillary type cor the requirements for type 2.K controls in 60730-2-9		~	N/A
24.1.5	Appliance couplers complying with IEC 6	0320-1	arr	N/A
/	However, for appliances classified higher IPX0, the appliance couplers complying v 60320-2-3			N/A
6	Interconnection couplers complying with 60320-2-2	IEC	) (	N/A
24.1.6	Small lamp holders similar to E10 lampho complying with IEC 60238, the requireme E10 lampholders being applicable			N/A

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# RET

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24.1.7	For remote operation of the appliance via a telecommunication network, the relevant standard	$\frown$	N/A
<b>r</b> )	for the telecommunication interface circuitry in the appliance is IEC 62151	RET	R
24.1.8	The relevant standard for thermal links is IEC 60691		N/A
	Thermal links not complying with IEC 60691 are considered to be an intentionally weak part for the purposes of Clause 19	RCT RC	N/A
24.1.9	Contactors and relays, other than motor starting relays, tested as part of the appliance		N/A
RET	They are also tested in accordance with Clause 17 of IEC 60730-1, the number of cycles of operations in 24.1.4 selected according to the contactor or relay function in the appliance:	) RET	N/A
24.2	Massage pads may be fitted with a switch in the flexible cord. (IEC 60335-2-43)	$\frown$	N/A
ET)	Massage chairs and massage beds may be fitted with a control in the flexible cord, provided that the length of the flexible cord is such that the control cannot make contact with the floor in normal use. (IEC 60335-2-43)	RET	N/A
	A control that does not contain live parts may be fitted in the flexible cord regardless of the length of the cord. (IEC 60335-2-43)	(RCT) (R	N/A
24.3	Switches intended for all-pole disconnection of stationary appliances are directly connected to the supply terminals and have a contact separation in all poles, providing full disconnection under overvoltage category III conditions	T) (RET)	N/A
24.4	Plugs and socket-outlets for extra-low voltage circuits and heating elements, not interchangeable with plugs and socket-outlets listed in IEC/TR 60083 or IEC 60906-1 or with connectors and appliance inlets complying with the standard sheets of IEC 60320-1	RCT	N/A
24.5	Capacitors in auxiliary windings of motors marked with their rated voltage and capacitance, and used accordingly		N/A
	Voltage across capacitors in series with a motor winding does not exceed 1,1 times rated voltage, when the appliance is supplied at 1,1 times rated voltage under minimum load	RET	N/A
24.6	Working voltage of motors connected to the supply mains and having basic insulation that is inadequate for the rated voltage of the appliance, not exceeding 42 V	CT RCT	N/A

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Clause	Requirement + Test	(RLI)	Result - Remark	Verdict

	In addition, the motors comply with the requirements of Annex I	N/A
24.7	Detachable hose-sets for connection of appliances to the water mains comply with IEC 61770	N/A
	They are supplied with the appliance	N/A
	Appliances intended to be permanently connected to the water mains not connected by a detachable hose-set	N/A
24.8	Motor running capacitors in appliances for which 30.2.3 is applicable and that are permanently connected in series with a motor winding, not causing a hazard in event of a failure	N/A
RET	One or more of the following conditions are to be met:	
$\sim$	- the capacitors are of class S2 or S3 according to IEC 60252-1	N/A
ET	- the capacitors are housed within a metallic or ceramic enclosure	N/A
	- the distance of separation of the outer surface to adjacent non-metallic parts exceeds 50 mm	N/A
	- adjacent non-metallic parts within 50 mm withstand the needle-flame test of Annex E	N/A
	- adjacent non-metallic parts within 50 mm classified as at least V-1 according to IEC 60695- 11-10	N/A
25	SUPPLY CONNECTION AND EXTERNAL FLEXIBLE CORDS	P
25.1	Appliance not intended for permanent connection to fixed wiring, means for connection to the supply:	N/A
	- supply cord fitted with a plug, the current rating and voltage rating of the plug being not less than the corresponding ratings of its associated appliance	N/A
	- an appliance inlet having at least the same degree of protection against moisture as required for the appliance, or	N/A
	- pins for insertion into socket-outlets	N/A
25.2	Appliance not provided with more than one means of connection to the supply mains	RP
(F	Stationary appliance for multiple supply may be provided with more than one means of connection, provided electric strength test of 10150 V for 1 min between each means of connection causes no breakdown	N/A
25.3	Appliance intended to be permanently connected to fixed wiring provided with one of the following means for connection to the supply mains:	N/A









		UL 60335-1		
Clause	Requirement + Test	) (RLT)	Result - Remark	Verdict

	- a set of terminals allowing the connection of a flexible cord	$\frown$	N/A
<b>T</b> )	- a fitted supply cord	( <i>RET</i> )	N/A
	- a set of supply leads accommodated in a suitable compartment		N/A
	- a set of terminals for the connection of cables of fixed wiring, cross-sectional areas specified in 26.6, and the appliance allows the connection of the supply conductors after the appliance has been fixed to its support	RCT	N/A
RET	- a set of terminals and cable entries, conduit entries, knock-outs or glands, allowing connection of appropriate types of cable or conduit, and the appliance allows the connection of the supply conductors after the appliance has been fixed to its support	RET	N/A
CT)	For a fixed appliance constructed so that parts can be removed to facilitate easy installation, this requirement is met if it is possible to connect the fixed wiring without difficulty after a part of the appliance has been fixed to its support	RET	N/A
25.4	Cable and conduit entries, rated current of appliance not exceeding 16 A, dimension according to table 10 (mm)	(RCT) (R	N/A
	Introduction of conduit or cable does not reduce clearances or creepage distances below values specified in clause 29		N/A
25.5	Method for assembling the supply cord to the appliar	nce:	N/A
(rec	- type X attachment	() (RL)	N/A
	- type Y attachment		N/A
	- type Z attachment, if allowed in relevant part 2	$\sim$	N/A
RET	Type X attachment, other than those with a specially prepared cord, not used for flat twin tinsel cords	RET	N/A
)	For multi-phase appliances supplied with a supply cord and that are intended to be permanently connected to fixed wiring, the supply cord is assembled to the appliance by type Y attachment	RET	N/A
25.6	Plugs fitted with only one flexible cord	$\bigcirc$	N/A
25.7	Supply cords, other than for class III appliances, beir	ng one of the following types:	N/A
(	- rubber sheathed (at least 60245 IEC 53)		N/A
(*	- polychloroprene sheathed (at least 60245 IEC 57)	CT) (RCT	N/A
<u>`</u>	- polyvinyl chloride sheathed. Not used if they are lik a temperature rise exceeding 75 K during the test of		N/A







		UL 60335-1		2
Clause	Requirement + Test	(RLI)	Result - Remark	Verdict

T	<ul> <li>light polyvinyl chloride sheathed cord (60227 IEC 52), for appliances not exceeding 3 kg</li> </ul>	N/A
	<ul> <li>ordinary polyvinyl chloride sheathed cord (60227 IEC 53), for other appliances</li> </ul>	N/A
	- heat resistant polyvinyl chloride sheathed. Not used for type X attachment oth than specially prepared cords	er N/A
	heat-resistant light polyvinyl chloride sheathed cord (60227 IEC 56), for appliances not exceeding 3 kg	N/A
	heat-resistant polyvinyl chloride sheathed cord (60227 IEC 57), for other appliances	N/A
AL	- halogen-free, low smoke, thermoplastic insulated and sheathed	N/A
$\left( \right)$	light duty halogen-free low smoke flexible cable (62821 IEC 101) for circular cable and (62821 IEC 101f) for flat cable	N/A
	Ordinary duty halogen-free low smoke flexible cable (62821 IEC 102) for circular cable and (62821 IEC 102f( for flat cable	N/A
	Supply cords for class III appliances adequately insulated	N/A
	Test with 500 V for 2 min for supply cords of classIII appliances that contain live parts	N/A
(	Flat twin tinsel cord is allowed for hand-held massage appliances as long as they are fitted with a non-rewirable plug.(IEC 60335-2-43)	N/A
25.8	Nominal cross-sectional area of supply cords not less than table 11; rated current (A); cross- sectional area (mm <sup>2</sup> )	N/A
25.9	Supply cords not in contact with sharp points or edges	N/A
25.10	Supply cord of class I appliances have a green/yellow core for earthing	N/A
v	In multi-phase appliances, the colour of the neutral conductor of the supply cord is blue.	N/A
-)	Where additional neutral conductors are provided in the supply cord:	N/A
	<ul> <li>– other colours may be used for these additional neutral conductors;</li> </ul>	N/A
(	<ul> <li>– all of the neutral conductors and line conductors are identified by marking using the alpha numeric notation specified in IEC 60445</li> </ul>	N/A
	- the supply cord is fitted to the appliance	N/A

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Clause	Requirement + Test	RLT	Result - Remark	Verdict

25.11	Conductors of supply cords not consolidated by soldering where they are subject to contact	N/A
<b>T</b> )	pressure, unless	(RCT) (RL
	the contact pressure is provided by spring terminals	N/A
25.12	Insulation of the supply cord not damaged when moulding the cord to part of the enclosure	N/A
25.13	Inlet openings so constructed as to prevent damage to the supply cord	N/A
	If it is not evident that the supply cord can be introduced without risk of damage , a non- detachable lining or bushing complying with 29.3 for supplementary insulation provided	N/A
$\sim$	If unsheathed supply cord, a similar additional bushing or lining is required, unless the appliance is	N/A
	class 0, or	N/A
	a class III appliance not containing live parts	N/A
25.14	Supply cords moved while in operation adequately protected against excessive flexing	N/A
	Flexing test, as described:	N/A
	- applied force (N):	- N/A
	- number of flexings:	N/A
	The test does not result in:	N/A
RL	- short-circuit between the conductors, such that the current exceeds a value of twice the rated current	RET N/A
	- breakage of more than 10% of the strands of any conductor	N/A
art	- separation of the conductor from its terminal	N/A
	- loosening of any cord guard	N/A
	- damage to the cord or the cord guard	N/A
1	- broken strands piercing the insulation and becoming accessible	N/A
25.15	For appliances with supply cord and appliances to be permanently connected to fixed wiring by a flexible cord, conductors of the supply cord relieved from strain, twisting and abrasion by use of cord anchorage	N/A
(	The cord cannot be pushed into the appliance to such an extent that the cord or internal parts of the appliance can be damaged	N/A
	Pull and torque test of supply cord:	N/A









		UL 60335-1		
Clause	Requirement + Test	) (RLT)	Result - Remark	Verdict

	- fixed appliances: pull 100 N; torque (not on automatic cord reel) (Nm) :	$\frown$	N/A
9	- other appliances: values shown in table 12: mass (kg); pull (N); torque (not on automatic cord reel) (Nm) :	RET	N/A
	Pull and torque test of supply cord, values shown in table 12: mass (kg); pull (N); torque (not on automatic cord reel) (Nm):	RCT) (RC	N/A
	Cord not damaged and max. 2 mm displacement of the cord		N/A
25.16	Cord anchorages for type X attachments constructed	and located so that:	N/A
(PCT	- replacement of the cord is easily possible	(prt)	N/A
C	- it is clear how the relief from strain and the prevention of twisting are obtained		N/A
(	- they are suitable for different types of supply cord		N/A
<b>ET</b> )	- cord cannot touch the clamping screws of cord anchorage if these screws are accessible, unless	(RET)	N/A
	they are separated from accessible metal parts by supplementary insulation	$\sim$	N/A
	- the cord is not clamped by a metal screw which bears directly on the cord	(arr)	N/A
	- at least one part of the cord anchorage securely fixed to the appliance, unless		N/A
	it is part of a specially prepared cord	_	N/A
RL	- screws which have to be operated when replacing the cord do not fix any other component, unless	T) (RET)	N/A
	the appliance becomes inoperative or incomplete or the parts cannot be removed without a tool		N/A
arr	- if labyrinths can be bypassed the test of 25.15 is nevertheless withstood	art	N/A
	- for class 0, 0I and I appliances they are of insulating material or are provided with an insulating lining, unless		N/A
1	failure of the insulation of the cord does not make accessible metal parts live	PET	N/A
/	- for class II appliances they are of insulating material, or	$\bigcirc$	N/A
	if of metal, they are insulated from accessible metal parts by supplementary insulation		N/A
(	After the test of 25.15, under the conditions specified, the conductors have not moved by more than 1 mm in the terminals	RET	N/A







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Clause	Requirement + Test	RLI	Result - Remark	Verdict	

25.17	Adequate cord anchorages for type Y and Z attachment, test with the cord supplied with the appliance	PET	N/A
25.18	Cord anchorages only accessible with the aid of a tool, or		N/A
	Constructed so that the cord can only be fitted with the aid of a tool	$\frown$	N/A
25.19	Type X attachment, glands not used as cord anchorage in portable appliances	RET	N/A
$\sim$	Tying the cord into a knot or tying the cord with string not used		N/A
25.20 RCT	The conductors of the supply cord for type Y and Z attachment insulated from accessible metal parts	) ( <b>RCT</b> )	N/A
25.21	Space for supply cord for type X attachment or for co constructed:	nnection of fixed wiring	N/A
CT)	- to permit checking of conductors with respect to correct positioning and connection before fitting any cover	RET	N/A
	- so there is no risk of damage to the conductors or their insulation when fitting the cover		N/A
	- for portable appliances, so that the uninsulated end of a conductor, if it becomes free from the terminal, prevented from contact with accessible metal parts	RET	N/A
-	2 N test to the conductor for portable appliances; no contact with accessible metal parts	$\sim$	N/A
25.22	Appliance inlets:	<b>T</b> ) ( <b>R</b> C <b>T</b> )	N/A
	- live parts not accessible during insertion or removal		N/A
	Requirement not applicable to appliance inlets complying with IEC 60320-1		N/A
	- connector can be inserted without difficulty	(AL I)	N/A
	- the appliance is not supported by the connector		N/A
\	- not for cold conditions if temp. rise of external metal parts exceeds 75 K during clause 11, unless		N/A
)	the supply cord is unlikely to touch such metal parts	RET	N/A
25.23	Interconnection cords comply with the requirements for the supply cord, except that:	$\sim$	N/A
R	- the cross-sectional area of the conductors is determined on the basis of the maximum current during clause 11	ET) (RET	N/A
	- the thickness of the insulation may be reduced		N/A









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Clause	Requirement + Test	(RLI)	Result - Remark	Verdict

_	If necessary, electric strength test of 16.3	N/A
25.24	Interconnection cords not detachable without the aid of a tool if compliance with this standard is impaired when they are disconnected	RCT
25.25	Dimensions of pins that are inserted into socket- outlets compatible with the dimensions of the relevant socket-outlet.	P
	Dimensions of pins and engagement face in accordance with the dimensions of the relevant plug in IEC/TR 60083	
26	TERMINALS FOR EXTERNAL CONDUCTORS	N/A
26.1 <b>RET</b>	Appliances provided with terminals or equally effective devices for connection of external conductors	N/A
	Terminals only accessible after removal of a non- detachable cover, except	N/A
ET	for class III appliances that do not contain live parts	N/A
	Earthing terminals may be accessible if a tool is required to make the connections and means are provided to clamp the wire independently from its connection	N/A
26.2	Appliances with type X attachment and appliances for the connection of cables to fixed wiring provided with terminals in which connections are made by means of screws, nuts or similar devices, unless	N/A
-	the connections are soldered	N/A
RL	Screws and nuts not used to fix any other component, except	RET N/A
$\frown$	internal conductors, if so arranged that they are unlikely to be displaced when fitting the supply conductors	N/A
RET	If soldered connections used, the conductor so positioned or fixed that reliance is not placed on soldering alone, unless	N/A
)	barriers provided so that neither clearances nor creepage distances between live parts and other metal parts reduced below the values for supplementary insulation if the conductor becomes free at the soldered joint	N/A
26.3	Terminals for type X attachment and for connection of cables of fixed wiring so constructed that the conductor is clamped between metal surfaces with sufficient contact pressure but without damaging the conductor	N/A
	Terminals fixed so that when the clamping means is tighte	ened or loosened: N/A

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1	V	







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_	- the terminal does not become loose		N/A
mer	- internal wiring is not subjected to stress	(	N/A
9	- neither clearances nor creepage distances are reduced below the values in clause 29		N/A
	Compliance checked by inspection and by the test of subclause 9.6 of IEC 60999-1, the torque applied being equal to two-thirds of the torque specified (Nm)	RCT (RC	N/A
	No deep or sharp indentations of the conductors		N/A
26.4	Terminals for type X attachment, except those having a specially prepared cord and those for the connection of cables of fixed wiring, no special preparation of conductors such as by soldering, use of cable lugs, eyelets or similar, and	)	N/A
	so constructed or placed that conductors prevented from slipping out when clamping screws or nuts are tightened		N/A
26.5	Terminals for type X attachment so located or shielded that if a wire of a stranded conductor escapes, no risk of accidental connection to other parts that result in a hazard	(AL)	N/A
	Stranded conductor test, 8 mm insulation removed	(arr) (a	N/A
	No contact between live parts and accessible metal parts and,	(ari)	N/A
(ar	for class II constructions, between live parts and metal parts separated from accessible metal parts by supplementary insulation only		N/A
26.6	Terminals for type X attachment and for connection of cables of fixed wiring suitable for connection of conductors with cross-sectional area according to table 13; rated current (A); nominal cross-sectional area (mm <sup>2</sup> ):		N/A
	If a specially prepared cord is used, terminals need only be suitable for that cord	RLI	N/A
26.7	Terminals for type X attachment, except in class III appliances not containing live parts, accessible after removal of a cover or part of the enclosure		N/A
26.8	Terminals for the connection of fixed wiring, including the earthing terminal, located close to each other	AL I	N/A
26.9	Terminals of the pillar type constructed and located as specified		N/A
26.10	Terminals with screw clamping and screwless terminals not used for flat twin tinsel cords, unless		N/A

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Clause	Requirement + Test	RLI	Result - Remark	Verdict

	conductors ends fitted with means suitable for screw terminals	$\frown$	N/A
7)	Pull test of 5 N to the connection	(RET)	N/A
26.11	For type Y and Z attachment, soldered, welded, crimped or similar connections may be used		N/A
	For Class II appliances, the conductor so positioned or fixed that reliance is not placed on soldering, welding or crimping alone	RCT) (RC	N/A
RET	If soldering, welding or crimping alone used, barriers provided so that clearances and creepage distances between live parts and other metal parts are not reduced below the values for supplementary insulation if the conductor becomes free	RET	N/A
27	PROVISION FOR EARTHING		
27.1	Accessible metal parts of Class 0I and I appliances permanently and reliably connected to an earthing terminal or earthing contact of the appliance inlet	RET	N/A
	Earthing terminals and earthing contacts not connected to the neutral terminal		N/A
	Class 0, II and III appliances have no provision for earthing	(acr) (a	P
	Class II appliances and class III appliances can incorporate an earth for functional purposes		N/A
C	Safety extra-low voltage circuits not earthed, unless		N/A
RE	protective extra-low voltage circuits	( <b>R</b> CT)	N/A
27.2	Clamping means of earthing terminals adequately secured against accidental loosening		N/A
RET	Terminals for the connection of external equipotential bonding conductors allow connection of conductors of 2.5 to 6 mm <sup>2</sup> , and	RET	N/A
	do not provide earthing continuity between different parts of the appliance, and		N/A
	conductors cannot be loosened without the aid of a tool	acr	N/A
/	Requirements not applicable to class II appliances and class III appliances that incorporate an earth for functional purposes		N/A
27.3	For a detachable part having an earth connection and being plugged into another part of the appliance, the earth connection is made before and separated after current-carrying connections when removing the part	CT RCT	N/A

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Clause	Requirement + Test	RLI	Result - Remark	Verdict	5

28	SCREWS AND CONNECTIONS	Р
(	Requirements not applicable to class II appliances and class III appliances that incorporate an earth for functional purposes	RET N/A
, ,	They may be used to provide earthing continuity in other appliances if at least two tracks are used with independent soldering points and the appliance complies with 27.5 for each circuit	N/A
27.6	The printed conductors of printed circuit boards not used to provide earthing continuity in hand-held appliances.	N/A
$\bigcirc$	Resistance not exceeding 0,1 $\Omega$ at the specified low-resistance test ( $\Omega$ )	N/A
ACT	Requirements not applicable to class II appliances and class III appliances that incorporate an earth for functional purposes	N/A
R	This requirement does not apply to connections providing earthing continuity in the protective extra- low voltage circuit, provided the clearances of basic insulation are based on the rated voltage of the appliance	RCT N/A
27.5	Low resistance of connection between earthing terminal and earthed metal parts	N/A
	Requirements not applicable to class II appliances and class III appliances that incorporate an earth for functional purposes	N/A
CT)	In the body of the earthing terminal is a part of a frame or enclosure of aluminium or aluminium alloys, precautions taken to avoid risk of corrosion	N/A
	Adequate protection against rusting of parts of coated or uncoated steel, only intended to provide or transmit contact pressure	N/A
RE	If of steel, these parts provided with an electroplated coating with a thickness at least 5 μm	N/A
	Parts providing earthing continuity, other than parts of a metal frame or enclosure, have adequate resistance to corrosion	N/A
27.4	No risk of corrosion resulting from contact between parts of the earthing terminal and the copper of the earthing conductor or other metal	RCT N/A
	Requirements not applicable to class II appliances and class III appliances that incorporate an earth for functional purposes	N/A
T	For appliances with supply cords, current-carrying conductors become taut before earthing conductor, if the cord slips out of the cord anchorage	N/A









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Clause	Requirement + Test	(RLI)	Result - Remark	Verdict

28.1	Fixings, electrical connections and connections providing earthing continuity withstand mechanical stresses	P
	Screws not of soft metal liable to creep, such as zinc or aluminium	P
	Diameter of screws of insulating material min. 3 mm	N/A
	Screws of insulating material not used for any electrical connections or connections providing earthing continuity	N/A
RET	Screws used for electrical connections or connections providing earthing continuity screwed into metal	N/A
	Screws not of insulating material if their replacement by a metal screw can impair supplementary or reinforced insulation	N/A
СТ	For type X attachment, screws to be removed for replacement of supply cord or for user maintenance, not of insulating material if their replacement by a metal screw impairs basic insulation	N/A
	For screws and nuts; torque-test as specified in table 14 (see appended table)	ACT
28.2	Electrical connections and connections providing earthing continuity constructed so that contact pressure is not transmitted through non-ceramic insulating material liable to shrink or distort, unless	N/A
RI	there is resiliency in the metallic parts to compensate for shrinkage or distortion of the insulating material	D N/A
$\frown$	This requirement does not apply to electrical connections in circuits of appliance for which:	s N/A
RET	30.2.2 is applicable and that carry a current not exceeding 0,5 A	N/A
	30.2.3 is applicable and that carry a current not exceeding 0,2 A	N/A
28.3	Space-threaded (sheet metal) screws only used for electrical connections if they clamp the parts together	N/A
G	Thread-cutting (self-tapping) screws and thread rolling screws only used for electrical connections if they generate a full form standard machine screw thread	N/A
	Thread-cutting (self-tapping) screws not used if they are likely to be operated by the user or installer	N/A









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Clause	Requirement + Test	Result - Remark	Verdict

	Thread-cutting, thread rolling and space threaded so connections providing earthing continuity provided it connection:		N/A
7	- in normal use,		N/A
	- during user maintenance,		N/A
	- when replacing a supply cord having a type X attachment, or	art ar	N/A
	- during installation		N/A
	At least two screws being used for each connection providing earthing continuity, unless		N/A
RET	the screw forms a thread having a length of at least half the diameter of the screw	) ( <b>RCT</b> )	N/A
28.4	Screws and nuts that make mechanical connection secured against loosening if they also make electrical connections or connections providing earthing continuity		N/A
	This requirement does not apply to screws in the earthing circuit if at least two screws are used, or	RET	N/A
	if an alternative earthing circuit is provided		N/A
	Rivets for electrical connections or connections providing earthing continuity secured against loosening if the connections are subjected to torsion	RCT	N/A
29	CLEARANCES, CREEPAGE DISTANCES AND SC		N/A
R	Clearances, creepage distances and solid insulation withstand electrical stress	T) RET	N/A
C	For coatings used on printed circuits boards to protect the microenvironment (Type 1) or to provide basic insulation (Type 2), Annex J applies		N/A
RET	The microenvironment is pollution degree 1 under type 1 protection	RET	N/A
	For type 2 protection, the spacing between the conductors before the protection is applied is not less than the values specified in Table 1 of IEC 60664-3		N/A
)	These values apply to functional, basic, supplementary and reinforced insulation	RET	N/A
29.1	Clearances not less than the values specified in table 16, taking into account the rated impulse voltage for the overvoltage categories of table 15, unless	(see appended table)	N/A
6	for basic insulation and functional insulation they		N/A

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Clause	Requirement + Test	(RLI)	Result - Remark	Verdict

		$\sim$	
T	However, if the distances are affected by wear, distortion, movement of the parts or during assembly, the clearances for rated impulse voltages of 1500V and above are increased by 0,5 mm and the impulse voltage test is not applicable	RET	N/A
	For appliances intended for use at altitudes exceeding 2 000 m, the clearances in Table 16 is increased according to the relevant multiplier values in Table A.2 of IEC 60664-1	RCT RC	N/A
	Impulse voltage test is not applicable:		N/A
(	- when the microenvironment is pollution degree 3, or	$\frown$	N/A
RET	- for basic insulation of class 0 and class 01	) (RCT)	N/A
	- to appliances intended for use at altitudes exceeding 2 000 m		N/A
	Appliances are in overvoltage category II		N/A
	A force of 2 N is applied to bare conductors, other than heating elements	RLI	N/A
	A force of 30 N is applied to accessible surfaces		N/A
29.1.1	Clearances of basic insulation withstand the overvoltages, taking into account the rated impulse voltage	RET	N/A
	The values of table 16 or the impulse voltage test of clause 14 are applicable	(see appended table)	N/A
RC	Clearance at the terminals of tubular sheathed heating elements may be reduced to 1,0 mm if the microenvironment is pollution degree 1	T) RET	N/A
	Lacquered conductors of windings considered to be bare conductors		N/A
29.1.2	Clearances of supplementary insulation not less than those specified for basic insulation in table 16	(see appended table)	N/A
29.1.3	Clearances of reinforced insulation not less than those specified for basic insulation in table 16, using the next higher step for rated impulse voltage	(see appended table)	N/A
6	For double insulation, with no intermediate conductive part between basic and supplementary insulation, clearances are measured between live parts and the accessible surface, and the insulation system is treated as reinforced insulation		N/A
29.1.4	Clearances for functional insulation are the largest v	alues determined from:	N/A
	- table 16 based on the rated impulse voltage:	(see appended table)	N/A

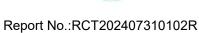
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Clause	Requirement + Test	(RLT)	Result - Remark	Verdict

	- table F.7a in IEC 60664-1, frequency not exceeding 30 kHz		N/A
D	- clause 4 of IEC 60664-4, frequency exceeding 30 kHz	RET	N/A
	If values of table 16 are largest, the impulse voltage test of clause 14 may be applied instead, unless		N/A
	the microenvironment is pollution degree 3, or	RCT) (RC	N/A
	the distances can be affected by wear, distortion, movement of the parts or during assembly		N/A
RE	However, clearances are not specified if the appliance complies with clause 19 with the functional insulation short-circuited	RCT	N/A
	Lacquered conductors of windings considered to be bare conductors	$\bigcirc$	N/A
ET	However, clearances at crossover points are not measured	RET	N/A
	Clearance between surfaces of PTC heating elements may be reduced to 1mm	$\bigcirc$	N/A
29.1.5	Appliances having higher working voltages than rated insulation are the largest values determined from:	d voltage, clearances for basic	N/A
	- table 16 based on the rated impulse voltage:	(RET) (A	N/A
	- table F.7a in IEC 60664-1, frequency not exceeding 30 kHz		N/A
A	- clause 4 of IEC 60664-4, frequency exceeding 30 kHz	T) RET	N/A
	If clearances for basic insulation are selected from Table F.7a of IEC 60664-1 or Clause 4 of IEC 60664-4, the clearances of supplementary insulation are not less than those specified for basic insulation		N/A
	If clearances for basic insulation are selected from Table F.7a of IEC 60664-1, the clearances of reinforced insulation dimensioned as specified in Table F.7a are to withstand 160% of the withstand voltage required for basic insulation		N/A
)	If clearances for basic insulation are selected from Clause 4 of IEC 60664-4, the clearances of reinforced insulation are twice the value required for basic insulation	RET	N/A

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Clause	Requirement + Test	(RLI)	Result - Remark	Verdict

/	If the secondary winding of a step-down	(	N/A
T	transformer is earthed, or if there is an earthed screen between the primary and secondary windings, clearances of basic insulation on the secondary side not less than those specified in table 16, but using the next lower step for rated impulse voltage	RET	R
	Circuits supplied with a voltage lower than rated voltage, clearances of functional insulation are based on the working voltage used as the rated voltage in table 15	RCT	N/A
29.2	Creepage distances not less than those appropriate for the working voltage, taking into account the material group and the pollution degree	(see appended table)	N/A
	Pollution degree 2 applies, unless		N/A
	- precautions taken to protect the insulation; pollution degree 1		N/A
	<ul> <li>insulation subjected to conductive pollution;</li> <li>pollution degree 3</li> </ul>	RET	N/A
	A force of 2 N is applied to bare conductors, other than heating elements		N/A
	A force of 30 N is applied to accessible surfaces	(RET) (R	N/A
	In a double insulation system, the working voltage for both the basic and supplementary insulation is taken as the working voltage across the complete double insulation system		N/A
29.2.1	Creepage distances of basic insulation not less than specified in table 17	(see appended table)	N/A
RET	However, if the working voltage is periodic and has a frequency exceeding 30 kHz, the creepage distances are also determined from table 2 of IEC 60664-4, these values being used if exceeding the values in table 17	RET	N/A
)	Except for pollution degree 1, corresponding creepage distance not less than the minimum specified for the clearance in table 16, if the clearance has been checked according to the test of clause 14	RET	N/A
29.2.2	Creepage distances of supplementary insulation at least those specified for basic insulation in table 17, or	(see appended table)	N/A
G	Table 2 of IEC 60664-4, as applicable		N/A
29.2.3	Creepage distances of reinforced insulation at least double those specified for basic insulation in table 17, or	(see appended table)	/ N/A









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Clause	Requirement + Test	RLT	Result - Remark	Verdict

_	Table 2 of IEC 60664-4, as applicable		N/A
29.2.4	Creepage distances of functional insulation not less than specified in table 18	(see appended table)	N/A
	However, if the working voltage is periodic and has a frequency exceeding 30 kHz, the creepage distances are also determined from table 2 of IEC 60664-4, these values being used if exceeding the values in table 18	RCT	N/A
	Creepage distances may be reduced if the appliance complies with clause 19 with the functional insulation short-circuited		N/A
29.3	Supplementary and reinforced insulation have adequate thickness, or a sufficient number of layers, to withstand the electrical stresses	) RCT	N/A
	Compliance checked:		N/A
~	- by measurement, in accordance with 29.3.1, or	$\sim$	N/A
<b>ET</b> )	- by an electric strength test in accordance with 29.3.2, or	RET	N/A
	- for insulation, other than single layer internal wiring insulation , by an assessment of the thermal quality of the material combined with an electric strength test, in accordance with 29.3.3, and	(arr)	N/A
	for accessible parts of reinforced insulation consisting of a single layer, by measurement in accordance with 29.3.4, or		N/A
RL	- by an assessment of the thermal quality of the material according to 29.3.3 combined with an electric strength test in accordance with 23.5, for each single layer internal wiring insulation touching each other, or	r) RCT	N/A
RET	- as specified in subclause 6.3 of IEC 60664-4 for insulation that is subjected to any periodic voltage having a frequency exceeding 30 kHz	RET	N/A
29.3.1	Supplementary insulation have a thickness of at least 1 mm	$\bigcirc$	N/A
	Reinforced insulation have a thickness of at least 2 mm	arr	N/A
29.3.2	Each layer of material withstand the electric strength test of 16.3 for supplementary insulation		N/A
/	Supplementary insulation consist of at least 2 layers		N/A
(A	Reinforced insulation consist of at least 3 layers	CT) (RCT	N/A
29.3.3	The insulation is subjected to the dry heat test Bb of IEC 60068-2-2, followed by		N/A

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-	the electric strength test of 16.3	(	N/A
7	If the temperature rise during the tests of clause 19 does not exceed the value specified in table 3, the test of IEC 60068-2-2 is not carried out	RET	N/A
29.3.4	Thickness of accessible parts of reinforced insulation consisting of a single layer not less than specified in table 19	$\bigcirc$	N/A
30	RESISTANCE TO HEAT AND FIRE		Р
30.1	External parts of non-metallic material,	$\bigcirc$	P
	parts supporting live parts, and		Р
RET	parts of thermoplastic material providing supplementary or reinforced insulation	) ( <b>RCT</b> )	Р
$\sim$	sufficiently resistant to heat		Р
	Ball-pressure test according to IEC 60695-10-2		Р
CT)	External parts tested at 40 °C plus the maximum temperature rise determined during the test of clause 11, or at 75 °C, whichever is the higher; temperature (°C)	(see appended table)	P
	Parts supporting live parts tested at 40°C plus the maximum temperature rise determined during the test of clause 11, or at 125 °C, whichever is the higher; temperature (°C)	(see appended table)	P
(ar	Parts of thermoplastic material providing supplementary or reinforced insulation tested at 25 °C plus the maximum temperature rise determined during clause 19, if higher; temperature (°C)	(see appended table)	Ρ
30.2	Parts of non-metallic material resistant to ignition and spread of fire		Р
-	This requirement does not apply to:		Р
RET	parts having a mass not exceeding 0,5 g, provided the cumulative effect is unlikely to propagate flames that originate inside the appliance by propagating flames from one part to another, or	RET	Ρ
)	decorative trims, knobs and other parts unlikely to be ignited or to propagate flames that originate inside the appliance	RET	RCI
	Compliance checked by the test of 30.2.1, and in addition:	$\bigcirc$	N/A
	- for attended appliances, 30.2.2 applies	$\sim$	Р
(4	- for unattended appliances, 30.2.3 applies	ICT) (RCT	N/A
(	For appliances for remote operation, 30.2.3 applies		N/A
	For base material of printed circuit boards, 30.2.4 applies		N/A









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Clause	Requirement + Test	RLI	Result - Remark	Verdict

30.2.1	Parts of non-metallic material subjected to the glow-wire test of IEC 60695-2-11 at 550 °C	P
<i>T</i> )	However, test not carried out if the material is classified as having a glow-wire flammability index according to IEC 60695-2-12 of at least 550 °C, or	P
	the material is classified at least HB40 according to IEC 60695-11-10	N/A
	Parts for which the glow-wire test cannot be carried out need to meet the requirements in ISO 9772 for material classified HBF	N/A
30.2.2	Appliances operated while attended, parts of non- metallic material supporting current-carrying connections, and	Р
$\sim$	parts of non-metallic material within a distance of 3mm of such connections,	Р
~	subjected to the glow-wire test of IEC 60695-2-11	Р
ET)	The test severity is:	P
	- 750 °C, for connections carrying a current exceeding 0,5 A during normal operation	Р
	- 650 °C, for other connections	Р
	Glow-wire applied to an interposed shielding material, if relevant	ACP)
	The glow-wire test is not carried out on parts of material classified as having a glow-wire flammability index according to IEC 60695-2-12 of at least:	Р
RL	- 750 °C, for connections carrying a current exceeding 0,5 A during normal operation	Р
-	- 650 °C, for other connections	P
	The glow-wire test is also not carried out on small parts. These parts are to:	Р
RCT	- comprise material having a glow-wire flammability index of at least 750 °C, or 650 °C as appropriate, or	Р
	- comply with the needle-flame test of Annex E, or	Р
	- comprise material classified as V-0 or V-1 according to IEC 60695-11-10	P
)	Glow-wire test not applicable to conditions as specified	Р
30.2.3	Appliances operated while unattended, tested as specified in 30.2.3.1 and 30.2.3.2	N/A
(#	The tests are not applicable to conditions as	7 N/A









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Clause	Requirement + Test	(RLT)	Result - Remark	Verdict	

30.2.3.1	Parts of non-metallic material supporting connections carrying a current exceeding 0,2 A during normal operation, and	RET	N/A
	parts of non-metallic material, other than small parts, within a distance of 3 mm,	$\bigcirc$	N/A
	subjected to the glow-wire test of IEC 60695-2-11 with a test severity of 850 $^\circ\mathrm{C}$	$\bigcirc$	N/A
	Glow-wire applied to an interposed shielding material, if relevant	RCT	N/A
RET	The glow-wire test is not carried out on parts of material classified as having a glow-wire flammability index according to IEC 60695-2-12 of at least 850 °C	RCT	N/A
30.2.3.2	Parts of non-metallic material supporting connections, and	$\bigcirc$	N/A
	parts of non-metallic material within a distance of 3mm,		N/A
	subjected to glow-wire test of IEC 60695-2-11	RL I	N/A
	The test severity is:		N/A
	- 750 °C, for connections carrying a current exceeding 0,2 A during normal operation		N/A
	- 650 °C, for other connections	(RET) (A	N/A
	Glow-wire applied to an interposed shielding material, if relevant		N/A
RI	However, the glow-wire test of 750 °C or 650 °C as a on parts of material fulfilling both or either of the follo		N/A
2	- a glow-wire ignition temperature according to IEC 60695-2-13 of at least:		N/A
	• 775 °C, for connections carrying a current exceeding 0,2 A during normal operation		N/A
HLT)	675 °C, for other connections	RET	N/A
$\sim$	- a glow-wire flammability index according to IEC 60695-2-12 of at least:		N/A
)	- 750 °C, for connections carrying a current exceeding 0,2 A during normal operation	RET	N/A
	- 650 °C, for other connections	$\bigcirc$	N/A
	The glow-wire test is also not carried out on small pa	arts. These parts are to:	N/A
(A	- comprise material having a glow-wire ignition temperature of at least 775 °C or 675 °C as appropriate, or	CT RET	N/A

1		
	7	







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Clause	Requirement + Test	) (RLI)	Result - Remark	Verdict

	- comprise material having a glow-wire flammability index of at least 750 °C or 650 °C as appropriate, or	N/A
2	- comply with the needle-flame test of Annex E, or	N/A
	- comprise material classified as V-0 or V-1 according to IEC 60695-11-10	N/A
	The consequential needle-flame test of Annex E applied to non-metallic part encroach within the vertical cylinder placed above the centre of the connect zone and on top of the non-metallic parts supporting current-carrying connect and parts of non-metallic material within a distance of 3 mm of such connect these parts are those:	tion ections,
RE	- parts that withstood the glow-wire test of IEC 60695-2-11 of 750 °C or 650 °C as appropriate, but produce a flame that persist longer than 2 s, or	N/A
$\frown$	- parts that comprised material having a glow-wire flammability index of at least 750 °C or 650 °C as appropriate, or	N/A
	- small parts, that comprised material having a glow-wire flammability index of at least 750 °C or 650 °C as appropriate, or	N/A
	- small parts for which the needle-flame test of Annex E was applied, or	N/A
	- small parts for which a material classification of V- 0 or V-1 was applied	N/A
	However, the consequential needle-flame test is not carried out on non-me parts, including small parts, within the cylinder that are:	etallic N/A
R	- parts having a glow-wire ignition temperature of at least 775 °C or 675 °C as appropriate, or	N/A
	- parts comprising material classified as V-0 or V-1 according to IEC 60695-11-10, or	N/A
RET	- parts shielded by a flame barrier that meets the needle-flame test of Annex E or that comprises material classified as V-0 or V-1 according to IEC 60695-11-10	N/A
30.2.4	Base material of printed circuit boards subjected to the needle-flame test of Annex E	N/A
1)	Test not applicable to conditions as specified :	N/A
31	RESISTANCE TO RUSTING	Р
	Relevant ferrous parts adequately protected against rusting	Р
	Tests specified in part 2 when necessary	RET P
32	RADIATION, TOXICITY AND SIMILAR HAZARDS	N/A









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Clause	Requirement + Test	) (RL I )	Result - Remark	Verdict

7	Appliance does not emit harmful radiation or present a toxic or similar hazard due to their operation in normal use	RET	N/A
	Compliance is checked by the limits or tests specified in part 2, if relevant	$\bigcirc$	N/A
Α	ANNEX A (INFORMATIVE) ROUTINE TESTS		N/A
	Description of routine tests to be carried out by the manufacturer	RLT	N/A
В	ANNEX B (NORMATIVE) APPLIANCES POWERED BY RECHARGEABLE B RECHARGED IN THE APPLIANCE	BATTERIES THAT ARE	N/A
RL	The following modifications to this standard are applicable for appliances powered by batteries that are recharged in the appliance	REI	N/A
~	This annex does not apply to battery chargers		N/A
<u>C</u> T	a) Appliance supplied directly from the supply mains or a renewable energy source, the battery charging circuitry and other supply unit circuitry incorporated within the appliance	RET	N/A
	b) The part of the appliance incorporating the battery is supplied from the supply mains or a renewable energy source, via a detachable supply unit. The battery charging circuitry is incorporated within the part of the appliance containing the battery	RET	N/A
R	c) The part of the appliance incorporating the battery is supplied from the supply mains or a renewable energy source, via a detachable supply unit. The battery charging circuitry is incorporated within the detachable supply unit	T) RCT	N/A
3.1.9	Appliance operated under the following conditions:	$\bigcirc$	N/A
RET	- the appliance, supplied by its fully charged battery, operated as specified in relevant part 2	RET	N/A
	- the battery is charged, the battery being initially discharged to such an extent that the appliance cannot operate	$\bigcirc$	N/A
)	-if possible, the appliance is supplied from the supply mains through its battery charger, the battery being initially discharged to such an extent that the appliance cannot operate. The appliance is operated as specified in relevant part 2	RET	N/A
(	- if the appliance incorporates inductive coupling between two parts that are detachable from each other, the appliance is supplied from the supply mains with the detachable part removed	CT) (RCT	N/A

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Clause	Requirement + Test	RLI	Result - Remark	Verdict

3.6.2	Part to be removed in order to discard the battery is not considered to be detachable	$\frown$	N/A
5.B.101	Appliances supplied from the supply mains tested as specified for motor-operated appliances	RET	N/A
7.1	Battery compartment for batteries intended to be replaced by the user, marked with battery voltage and polarity of the terminals	$\bigcirc$	N/A
	The positive terminal indicated by symbol IEC 60417-5005 and the negative terminal by symbol IEC 60417-5006	RET	N/A
RET	Appliances intending to be supplied from a detachable supply unit marked with symbol IEC 60417-6181 and its type reference along with symbol ISO 7000-0790 (2004-01), or	)	N/A
	use only with <model designation=""> supply unit</model>		N/A
7.6	Additional symbols	$\frown$	N/A
7.12	The instructions give information regarding charging	(RCT)	N/A
	The instructions for appliances incorporating batteries intended to be replaced by the user includes required information		N/A
	Instructions for appliances containing non user-repla substance of the following:	ceable batteries state the	N/A
	This appliance contains batteries that are only replaceable by skilled persons		N/A
RE	Instructions for appliances containing non-replaceable substance of the following:	le batteries shall state the	N/A
	This appliance contains batteries that are non- replaceable		N/A
RET	For appliances intending to be supplied from a detac purposes of recharging the battery, the type reference is stated along with the following:		N/A
$\smile$	WARNING: For the purposes of recharging the battery, only use the detachable supply unit provided with this appliance		N/A
)	If the symbol for detachable supply unit is used, its meaning is explained	(RCT)	N/A
7.15	Markings placed on the part of the appliance connected to the supply mains		N/A
8.2	Appliances having batteries that according to the instruction may be replaced by the user need only have basic insulation between live parts and the inner surface of the battery compartment	CT) RCT	N/A

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Clause	Requirement + Test	RLI	Result - Remark	Verdict

с	ANNEX C (NORMATIVE)		N/A
	mains during the charging period, 30.2.3 applies For other parts, 30.2.2 applies	CT DET	N/A
25.13	An additional lining or bushing not required for interconnection cords in class III appliances or class III constructions operating at safety extra-low voltage not containing live parts For parts of the appliance connected to the supply	RET	N/A N/A
22.3	Appliances having pins for insertion into socket- outlets tested as fully assembled as possible		N/A
RET	After the test, the requirements of 8.1, 15.1.1, 16.3 and clause 29 are met	RET	N/A
$\frown$	- 50, if the mass of the part exceeds 250 g	$\frown$	N/A
	- 100, if the mass of the part does not exceed 250 g (g):		N/A
RE	Part of the appliance incorporating the pins subjecte 2, of IEC 60068-2-31, the number of falls being:	d to the free fall test, procedure	N/A
21.B.101	Appliances having pins for insertion into socket- outlets have adequate mechanical strength		N/A
19.13	The battery does not rupture or ignite	(mai) (m	N/A
19.B.103	Appliances having batteries replaceable by the user supplied at rated voltage under normal operation with the battery removed or in any position allowed by the construction		N/A
19.B.102	For appliances having batteries that can be removed without the aid of a tool, short-circuit of the terminals of the battery, the battery being fully charged,	RET	N/A
19.B.101	Appliances supplied at rated voltage for 168 h, the battery being continually charged		N/A
19.10	Not applicable	) (ACT)	N/A
19.1	Appliances subjected to tests of 19.B.101, 19.B.102 and 19.B.103	(	N/A
	If no limit specified, the temperature rise does not exceed 20 K; measured (K)	RCT	N/A
11.8	Temperature rise of the battery surface does not exceed the limit in the battery manufacturer's specification; measured (K); limit (K)	$\frown$	N/A
11.7	The battery is charged for the period stated in the instructions or 24 h	RET	N/A
	If the appliance can be operated without batteries, double or reinforced insulation required	$\frown$	N/A

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Clause	Requirement + Test	(RLI)	Result - Remark	Verdict

	Tests, as described, carried out when doubt with regard to the temperature classification of the insulation of a motor winding	ACT	N/A
9	Test conditions as specified		N/A
D	ANNEX D (NORMATIVE) THERMAL MOTOR PROTECTORS		N/A
	Applicable to appliances having motors that incorporate thermal motor protectors necessary for compliance with the standard	RCT (RC	N/A
	Test conditions as specified		N/A
E	ANNEX E (NORMATIVE) NEEDLE-FLAME TEST		N/A
C	Needle-flame test carried out in accordance with IEC following modifications:	60695-11-5, with the	N/A
7	Severities		N/A
ET)	The duration of application of the test flame is $30 \text{ s} \pm 1 \text{ s}$	RET	N/A
9	Test procedure	$\bigcirc$	N/A
9.1	The specimen so arranged that the flame can be applied to a vertical or horizontal edge as shown in the examples of Figure 1		N/A
9.2	The first paragraph does not apply		N/A
	If possible, the flame is applied at least 10 mm from a corner		N/A
9.3	The test is carried out on one specimen		N/A
(AL	If the specimen does not withstand the test, the test may be repeated on two additional specimens, both withstanding the test		N/A
11	Evaluation of test results	$\frown$	N/A
RCT)	The duration of burning not exceeding 30 s	(RET)	N/A
$\bigcirc$	However, for printed circuit boards, the duration of burning not exceeding 15 s	$\bigcirc$	N/A
F	ANNEX F (NORMATIVE) CAPACITORS		N/A
)	Capacitors likely to be permanently subjected to the s radio interference suppression or voltage dividing, cor clauses of IEC 60384-14, with the following modification	nply with the following	N/A
1.5	Terms and definitions		N/A
1.5.3	Class X capacitors tested according to subclass X2	CT) (RET	N/A
1.5.4	This subclause is applicable		N/A
1.6	Marking		N/A

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Clause	Requirement + Test	(RLT)	Result - Remark	Verdict

_	Items a) and b) are applicable	N/A
3.4	Approval testing	N/A
3.4.3.2	Table 3 is applicable as described	N/A
4.1	Visual examination and check of dimensions	N/A
	This subclause is applicable	N/A
4.2	Electrical tests	N/A
4.2.1	This subclause is applicable	N/A
4.2.5	This subclause is applicable	N/A
4.2.5.2	Only table 11 is applicable	N/A
RET	Values for test A apply	<b>C7</b> N/A
$\bigcirc$	However, for capacitors in heating appliances the values for test B or C apply	N/A
4.12	Damp heat, steady state	N/A
ET	This subclause is applicable	N/A
	Only insulation resistance and voltage proof are checked	N/A
4.13	Impulse voltage	N/A
	This subclause is applicable	N/A
4.14	Endurance	N/A
	Subclauses 4.14.1, 4.14.3, 4.14.4 and 4.14.7 are applicable	N/A
4.14.7 <b>RE</b>	Only insulation resistance and voltage proof are checked	N/A
	No visible damage	N/A
4.17	Passive flammability test	N/A
$\square$	This subclause is applicable	N/A
4.18	Active flammability test	N/A
$\smile$	This subclause is applicable	N/A
G	ANNEX G (NORMATIVE) SAFETY ISOLATING TRANSFORMERS	N/A
)	The following modifications to this standard are applicable for safety isolati transformers:	ng N/A
7	Marking and instructions	N/A
7.1	Transformers for specific use marked with:	N/A
R	-name, trademark or identification mark of the manufacturer or responsible vendor	RET N/A
	-model or type reference	N/A

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Clause	Requirement + Test	(RLI)	Result - Remark	Verdict

17	Overload protection of transformers and associated circuits	N/A
	Fail-safe transformers comply with subclause 15.5     of IEC 61558-1	N/A
22	Construction	N/A
	Subclauses 19.1 and 19.1.2 of IEC 61558-2-6 are applicable	N/A
29	Clearances, creepage distances and solid insulation	N/A
29.1, 29.2, 29.3	The distances specified in items 2a, 2c and 3 in table 13 of IEC 61558-1 apply	N/A
	For insulated winding wires complying with subclause 19.12.3 of IEC 61558-1 there are no requirements for clearances or creepage distances	N/A
$\sim$	For windings providing reinforced insulation, the distance specified in item 2c of table 13 of IEC 61558-1 is not assessed	N/A
CT)	For safety isolating transformers subjected to periodic voltages with a frequency exceeding 30 kHz, the clearances, creepage distances and solid insulation values specified in IEC 60664-4 are applicable, if greater than the values specified in items 2a, 2c and 3 in table 13 of IEC 61558-1	N/A
Н	ANNEX H (NORMATIVE) SWITCHES	N/A
	Switches comply with the following clauses of IEC 61058-1, as modified below:	N/A
6	The tests of IEC 61058-1 carried out under the conditions occurring in the appliance	N/A
KL	Before being tested, switches are operated 20 times without load	N/A
8	Marking and documentation	N/A
$\frown$	Switches are not required to be marked	N/A
RET	However, a switch that can be tested separately from the appliance marked with the manufacturer's name or trade mark and the type reference	N/A
13	Mechanism	N/A
	The tests may be carried out on a separate sample	N/A
15	Insulation resistance and dielectric strength	N/A
15.1	Not applicable	N/A
15.2	Not applicable	N/A
15.3	Applicable for full disconnection and micro- disconnection	N/A
17	Endurance	N/A

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Clause	Requirement + Test	(RLT)	Result - Remark	Verdict

	Compliance is checked on three separate appliances or switches	N/A
2	For 17.2.4.4, the number of cycles declared according to 7.1.4 is 10 000, unless	N/A
	otherwise specified in 24.1.3 of the relevant part 2 of IEC 60335	N/A
	Switches for operation under no load and which can be operated only by a tool, and	CT) (RCT <sup>N/A</sup>
	switches operated by hand that are interlocked so that they cannot be operated under load,	N/A
	are not subjected to the tests	N/A
	However, switches without this interlock are subjected to the test of 17.2.4.4 for 100 cycles of operation	N/A
	Subclauses 17.2.2 and 17.2.5.2 not applicable	N/A
ET	The ambient temperature during the test is that occurring in the appliance during the test of Clause 11 in IEC 60335-1	RCT N/A
	The temperature rise of the terminals not more than 30 K above the temperature rise measured in clause 11 of IEC 60335-1 (K)	N/A
20	Clearances, creepage distances, solid insulation and co assemblies	atings of rigid printed board N/A
	Clause 20 is applicable to clearances across full disconnection and micro-disconnection	N/A
	It is also applicable to creepage distances for functional insulation, across full disconnection and micro-disconnection, as stated in table 24	N/A
I	ANNEX I (NORMATIVE) MOTORS HAVING BASIC INSULATION THAT IS INA RATED VOLTAGE OF THE APPLIANCE	DEQUATE FOR THE
C	The following modifications to this standard are applications insulation that is inadequate for the rated voltage of the	
8	Protection against access to live parts	N/A
8.1	Metal parts of the motor are considered to be bare live parts	RCT N/A
11	Heating	N/A
11.3	The temperature rise of the body of the motor is determined instead of the temperature rise of the windings	N/A
11.8	The temperature rise of the body of the motor, where in contact with insulating material, not exceeding values in table 3 for the relevant insulating material	N/A







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Clause	Requirement + Test	(RLI)	Result - Remark	Verdict

16	Leakage current and electric strength	N/A
16.3	Insulation between live parts of the motor and its other metal parts is not subjected to the test	
19	Abnormal operation	N/A
19.1	The tests of 19.7 to 19.9 are not carried out	N/A
19.1.101	Appliance operated at rated voltage with each of the following fault conditions:	N/A
	- short circuit of the terminals of the motor, including any capacitor incorporated in the motor circuit	N/A
$\sim$	- short circuit of each diode of the rectifier	N/A
RET	- open circuit of the supply to the motor	N/A
$\bigcirc$	- open circuit of any parallel resistor, the motor being in operation	N/A
	Only one fault simulated at a time, the tests carried out consecutively	N/A
22	Construction - / / / / / / / / / / / / / / / / / /	N/A
22.1.101	For class I appliances incorporating a motor supplied by a rectifier circuit, the d.c. circuit being insulated from accessible parts of the appliance by double or reinforced insulation	N/A
	Compliance checked by the tests specified for double and reinforced insulation	N/A
J	ANNEX J (NORMATIVE) COATED PRINTED CIRCUIT BOARDS	N/A
RC	Testing of protective coatings of printed circuit boards carried out in accordance with IEC 60664-3 with the following modifications:	N/A
5.7	Conditioning of the test specimens	N/A
	When production samples are used, three samples of the printed circuit board are tested	N/A
5.7.1	Cold (ALI) (ALI)	N/A
$\smile$	The test is carried out at -25 °C	N/A
5.7.3	Rapid change of temperature	N/A
	Severity 1 is specified	N/A
5.9	Additional tests	N/A
	This subclause is not applicable	N/A
К	ANNEX K (NORMATIVE) OVERVOLTAGE CATEGORIES	Ρ
6	The information on overvoltage categories is extracted from IEC 60664-1	Р

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Clause	Requirement + Test	(RLI)	Result - Remark	Verdict	

	Overvoltage category is a numeral defining a transient overvoltage condition	P
7	Equipment of overvoltage category IV is for use at the origin of the installation	N/A
	Equipment of overvoltage category III is equipment in fixed installations and for cases where the reliability and the availability of the equipment is subject to special requirements	N/A
	Equipment of overvoltage category II is energy consuming equipment to be supplied from the fixed installation	Р
REI	If such equipment is subjected to special requirements with regard to reliability and availability, overvoltage category III applies	N/A
r.	Equipment of overvoltage category I is equipment for connection to circuits in which measures are taken to limit transient overvoltages to an appropriate low level	N/A
L	ANNEX L (INFORMATIVE) GUIDANCE FOR THE MEASUREMENT OF CLEARANCES DISTANCES	AND CREEPAGE
	Information for the determination of clearances and creepage distances	
Μ	ANNEX M (NORMATIVE) POLLUTION DEGREE	Р
1	The information on pollution degrees is extracted from IEC 60664-1	P
R	Pollution (RC1) (RC1)	RLT
$\sim$	The microenvironment determines the effect of pollution on the insulation, taking into account the macroenvironment	P
RET)	Means may be provided to reduce pollution at the insulation by effective enclosures or similar	(RCT) P
$\smile$	Minimum clearances specified where pollution may be present in the microenvironment	Р
\	Degrees of pollution in the microenvironment	P
)	For evaluating creepage distances, the following degrees of p microenvironment are established:	pollution in the
	- pollution degree 1: no pollution or only dry, non- conductive pollution occurs. The pollution has no influence	N/A
6	- pollution degree 2: only non-conductive pollution occurs, except that occasionally a temporary conductivity caused by condensation is to be	P









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Clause	Requirement + Test	RLI	Result - Remark	Verdict

	- pollution degree 3: conductive pollution occurs or dry non-conductive pollution occurs that becomes conductive due to condensation that is to be expected	
	- pollution degree 4: the pollution generates persistent conductivity caused by conductive dust or by rain or snow	N//
Ν	ANNEX N (NORMATIVE) PROOF TRACKING TEST	N//
	The proof tracking test is carried out in accordance with IEC 60112 with the following modifications:	N//
7	Test apparatus	N//
7.3	Test solutions	N//
$\sim$	Test solution A is used	N//
10	Determination of proof tracking index (PTI)	N//
10.1	Procedure	N//
	The proof voltage is 100V, 175V, 400V or 600V:	N//
	The test is carried out on five specimens	N//
	In case of doubt, additional test with proof voltage reduced by 25V, the number of drops increased to 100	N/
10.2	Report	N/.
G	The report states if the PTI value was based on a test using 100 drops with a test voltage of (PTI-25) V	N//
0	ANNEX O (INFORMATIVE) SELECTION AND SEQUENCE OF THE TESTS OF CLAUSE 30	N//
	Description of tests for determination of resistance to heat and fire	N//
Ρ	ANNEX P (INFORMATIVE) GUIDANCE FOR THE APPLICATION OF THIS STANDARD TO APPLIANCES USED IN TROPICAL CLIMATES	N//
	Modifications applicable for class 0 and 01 appliances having a rated voltage exceeding 150V, intended to be used in countries having a tropical climate and that are marked with symbol IEC 60417-6332	N/
	Modifications may also be applied to class 1 appliances having a rated voltage exceeding 150V, intended to be used in countries having a tropical climate and that are marked with symbol IEC 60417-6332, if liable to be connected to a supply mains that excludes the protective earthing conductor	N//
5.7	The ambient temperature for the tests of clauses 11 and 13 is 40 +3/0 °C	N/.
7.1	The appliance marked with symbol IEC 60417- 6332	N/.

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Clause	Requirement + Test	RLT	Result - Remark	Verdict

7.12	The instructions state that the appliance is to be supplied through a residual current device (RCD) having a rated residual operating current not exceeding 30 mA	RET	N/A
	The instructions state that the appliance is considered to be suitable for use in countries having a warm damp equable climate, but may also be used in other countries		N/A
	If symbol IEC 60417-6332 is used, its meaning is explained		N/A
11.8	The values of Table 3 are reduced by 15 K		N/A
13.2 <b>RCT</b>	The leakage current for class I appliances not exceeding 0,5 mA	RCT	N/A
15.3	The value of t is 37 °C		N/A
16.2	The leakage current for class I appliances not exceeding 0,5 mA (mA):		N/A
19.13	The leakage current test of 16.2 is applied in addition to the electric strength test of 16.3	RET	N/A
Q	ANNEX Q (INFORMATIVE) SEQUENCE OF TESTS FOR THE EVALUATION OF	ELECTRONIC CIRCUITS	N/A
	Description of tests for appliances incorporating electro	onic circuits	N/A
R	ANNEX R (NORMATIVE) SOFTWARE EVALUATION		N/A
RE	Programmable electronic circuits requiring software incorporating measures to control the fault/error conditions specified in table R.1 or R.2 validated in accordance with the requirements of this annex	r) (RET)	N/A
R.1	Programmable electronic circuits using software		N/A
RET	Programmable electronic circuits requiring software incorporating measures to control the fault/error conditions specified in table R.1 or R.2 constructed so that the software does not impair compliance with the requirements of this standard	RET	N/A
R.2	Requirements for the architecture		N/A
	Programmable electronic circuits requiring software	$\frown$	N/A
	incorporating measures to control the fault/error conditions specified in table R.1 or R.2 use measures to control and avoid software-related faults/errors in safety-related data and safety- related segments of the software	RET	
R.2.1.1	Programmable electronic circuits requiring software in control the fault/error conditions specified in table R.2 structures:		N/A
	- single channel with periodic self-test and		N/A









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Clause	Requirement + Test	RLI	Result - Remark	Verdict

	- dual channel (homogenous) with comparison		N/A
T	- dual channel (diverse) with comparison	(new)	N/A
9	Programmable electronic circuits requiring software control the fault/error conditions specified in table R. structures:		N/A
	- single channel with functional test	$\frown$	N/A
	- single channel with periodic self-test	RCT) (RC	N/A
	- dual channel without comparison		N/A
R.2.2	Measures to control faults/errors		N/A
R.2.2.1	When redundant memory with comparison is provided on two areas of the same component, the data in one area is stored in a different format from that in the other area	) RCT	N/A
R.2.2.2	Programmable electronic circuits with functions requiring software incorporating measures to control the fault/error conditions specified in table R.2 and that use dual channel structures with comparison, have additional fault/error detection means for any fault/errors not detected by the comparison	RCT	N/A
R.2.2.3	For programmable electronic circuits with functions requiring software incorporating measures to control the fault/error conditions specified in table R.1 or R.2, means are provided for the recognition and control of errors in transmissions to external safety-related data paths	RET	N/A
R.2.2.4	For programmable electronic circuits with functions requiring software incorporating measures to control the fault/error conditions specified in table R.1 or R.2, the programmable electronic circuits incorporate measures to address the fault/errors in safety-related segments and data indicated in table R.1 and R.2 as appropriate	RET PET	N/A
R.2.2.5	For programmable electronic circuits with functions requiring software incorporating measures to control the fault/error conditions specified in table R.1 or R.2, detection of a fault/error occur before compliance with clause 19 is impaired		N/A
R.2.2.6	The software is referenced to relevant parts of the operating sequence and the associated hardware functions	RET	N/A
R.2.2.7	Labels used for memory locations are unique	$\sim$	N/A
R.2.2.8	The software is protected from user alteration of safety-related segments and data	CT) (RCT	N/A

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R.2.2.9	Software and safety-related hardware under its control is initialized and terminates before compliance with clause 19 is impaired	art	N/A
R.3	Measures to avoid errors		N/A
R.3.1	General		N/A
	For programmable electronic circuits with functions measures to control the fault/error conditions speci following measures to avoid systematic fault in the	fied in table R.1 or R.2, the	N/A
RET	Software that incorporates measures used to control the fault/error conditions specified in table R.2 is inherently acceptable for software required to control the fault/error conditions specified in table R.1	T) (RCT)	N/A
R.3.2	Specification		N/A
R.3.2.1	Software safety requirements:	Software Id:	N/A
ET	The specification of the software safety requirements includes the descriptions listed	RET	N/A
R.3.2.2	Software architecture	$\bigcirc$	N/A
R.3.2.2.1	The specification of the software architecture includes the aspects listed	Document ref. No:	N/A
	<ul> <li>techniques and measures to control software faults/errors (refer to R.2.2);</li> <li>interactions between hardware and software;</li> <li>partitioning into modules and their allocation to the specified safety functions;</li> </ul>	RET	СТ
	<ul> <li>hierarchy and call structure of the modules (control flow);</li> <li>interrupt handling;</li> <li>data flow and restrictions on data access;</li> <li>architecture and storage of data;</li> <li>time-based dependencies of sequences and data</li> </ul>		
R.3.2.2.2	The architecture specification is validated against the specification of the software safety requirements by static analysis	RET	N/A
R.3.2.3	Module design and coding	$\sim$	N/A
R.3.2.3.1	Based on the architecture design, software is suitably refined into modules	(RET)	N/A
/	Software module design and coding is implemented in a way that is traceable to the software architecture and requirements		N/A
R.3.2.3.2	Software code is structured	RCT) (RCT	N/A
R.3.2.3.3	Coded software is validated against the module specification by static analysis	$\mathbf{P}$	N/A

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# RLI

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	The module specification is validated against the architecture specification by static analysis	N/A
R.3.3.3	Software validation	N/A
	The software is validated with reference to the requirements of the software safety requirements specification	N/A
	Compliance is checked by simulation of:	N/A
	- input signals present during normal operation	N/A
	- anticipated occurrences	N/A
~	- undesired conditions requiring system action	N/A
(act	r) (arr) (arr) (a	
S	ANNEX S (NORMATIVE) BATTERY OPERATED APPLIANCES POWERED BY BATTERIES THAT NON-RECHARGEABLE OR NOT RECHARGED IN THE APPLIANCE	
CT	The following modifications to this standard are applicable for battery-operated appliances where the batteries are either non-rechargeable (primary batteries), or	N/A
	rechargeable batteries (secondary batteries) that are not recharged in the appliance	N/A
5.8.1	If the supply terminals for the connection of the battery have no indication of polarity, the more unfavourable polarity is applied	N/A
5.S.101	Appliances intended for use with a battery box are tested with the battery box supplied with the appliance or with the battery box recommended in the instructions	N/A
5.S.102	Appliances are tested as motor-operated appliances.	N/A
7.1	Appliances marked with the battery voltage (V) and the polarity of the terminals, unless:	N/A
RET)	the polarity is irrelevant RLT RLT	N/A
	Appliances also marked with:	N/A
	– name, trade mark or identification mark of the manufacturer or responsible vendor	N/A
)	- model or type reference:	N/A
	<ul> <li>– IP number according to degree of protection against ingress of water, other than IPX0</li> </ul>	N/A
-	- type reference of battery or batteries	N/A
(	If relevant, the positive terminal is indicated by the symbol IEC 60417-5005 and the negative terminal by the symbol IEC 60417-5006	RCT N/A









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Clause	Requirement + Test	Resu	ult - Remark	Verdict

T	If appliances use more than one battery, they are marked to indicate correct polarity connection of the batteries	RET	N/A
7.6	Additional symbols	$\bigcirc$	N/A
7.12	The instructions contain the following, as applicable:		
	- the types of batteries that may be used:	$\frown$	N/A
	– how to remove and insert the batteries	(RCT) (RL	N/A
	<ul> <li>non-rechargeable batteries are not to be recharged</li> </ul>	$\bigcirc$	N/A
	<ul> <li>rechargeable batteries are to be removed from the appliance before being charged</li> </ul>		N/A
RLI	<ul> <li>different types of batteries or new and used batteries are not to be mixed</li> </ul>		N/A
	<ul> <li>batteries are to be inserted with the correct polarity</li> </ul>	(	N/A
cr)	<ul> <li>exhausted batteries are to be removed from the appliance and safely disposed of</li> </ul>	RET	N/A
	<ul> <li>if the appliance is to be stored unused for a long period, the batteries are removed</li> </ul>		N/A
	- the supply terminals are not to be short-circuited		N/A
11.5	Appliances are supplied with the most unfavourable s	supply voltage between	N/A
	<ul> <li>– 0,55 and 1,0 times the battery voltage, if the appliance can be used with non-rechargeable batteries</li> </ul>		N/A
	<ul> <li>– 0,75 and 1,0 times battery voltage, if the appliance is designed for use with rechargeable batteries only</li> </ul>	T) RET	N/A
	The values specified in Table S.101 for the internal resistance per cell of the battery is taken into account		N/A
19.1	The tests are carried out with the battery fully charged unless otherwise specified	RLT	N/A
19.13	The battery does not rupture or ignite		N/A
19.S.101	Appliances are supplied with the voltage specified	$\frown$	N/A
	in 11.5. The supply terminals having an indication of polarity are connected to the opposite polarity, unless	RET	
	such a connection is unlikely to occur due to the construction of the appliance	$\sim$	N/A
19.S.102	For appliances with provision for multiple batteries, one or more of the batteries are reversed and the appliance is operated, if reversal of batteries is allowed by the construction	ICT) RCT	N/A







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Clause	Requirement + Test	RLI	Result - Remark	Verdict

25.5	The flexible leads or flexible cord used to connect an external battery or battery box in is connected to the appliance by a type X attachment	N/A
25.13	This requirement is not applicable to the flexible leads or flexible cord connecting external batteries or a battery box with an appliance	N/A
25.S.101	Appliances have suitable means for connection of the battery. If the type of battery is marked on the appliance, the means of connection is suitable for this type of battery	N/A
26.5	Terminal devices in an appliance for the connection of the flexible leads or flexible cord connecting an external battery or battery box are so located or shielded that there is no risk of accidental connection between supply terminals	N/A
30.2.3.2	There is no battery in the area of the vertical cylinder used for the consequential needle flame test, unless	N/A
	the battery is shielded by a barrier that meets the needle flame test of Annex E, or	N/A
	that comprises material classified as V-0 or V-1 according to IEC 60695-11-10	N/A
Т		
	ANNEX T (NORMATIVE) UV-C RADIATION EFFECT ON NON-METALLIC MATERIALS	N/A
RI		
RI	UV-C RADIATION EFFECT ON NON-METALLIC MATERIALS         Requirements for non-metallic materials subject to direct or reflected UV-C radiation exposure and whose mechanical and electrical properties are	N/A
RI	UV-C RADIATION EFFECT ON NON-METALLIC MATERIALS         Requirements for non-metallic materials subject to direct or reflected UV-C radiation exposure and whose mechanical and electrical properties are relied upon for compliance with the         Does not apply to glass, ceramic and similar	N/A N/A
RI	UV-C RADIATION EFFECT ON NON-METALLIC MATERIALS         Requirements for non-metallic materials subject to direct or reflected UV-C radiation exposure and whose mechanical and electrical properties are relied upon for compliance with the         Does not apply to glass, ceramic and similar materials	N/A N/A N/A
RI RCT	UV-C RADIATION EFFECT ON NON-METALLIC MATERIALS         Requirements for non-metallic materials subject to direct or reflected UV-C radiation exposure and whose mechanical and electrical properties are relied upon for compliance with the         Does not apply to glass, ceramic and similar materials         Tested as specified in ISO 4892-1 and ISO 4892-2, with the following modifications:	N/A N/A N/A N/A
RI RCT	UV-C RADIATION EFFECT ON NON-METALLIC MATERIALS         Requirements for non-metallic materials subject to direct or reflected UV-C radiation exposure and whose mechanical and electrical properties are relied upon for compliance with the         Does not apply to glass, ceramic and similar materials         Tested as specified in ISO 4892-1 and ISO 4892-2, with the following modifications:         Modifications to ISO 4892-1:         The UV-C emitter is a low pressure mercury lamp with a quartz envelope having a continuous	N/A N/A N/A N/A
<b>RET</b> 5.1.6	UV-C RADIATION EFFECT ON NON-METALLIC MATERIALS         Requirements for non-metallic materials subject to direct or reflected UV-C radiation exposure and whose mechanical and electrical properties are relied upon for compliance with the       Image: Complex of the second s	N/A N/A N/A N/A N/A
5.2.4	UV-C RADIATION EFFECT ON NON-METALLIC MATERIALS         Requirements for non-metallic materials subject to direct or reflected UV-C radiation exposure and whose mechanical and electrical properties are relied upon for compliance with the         Does not apply to glass, ceramic and similar materials       Does not apply to glass, ceramic and similar materials         Tested as specified in ISO 4892-1 and ISO 4892-2, with the following modifications:       Modifications to ISO 4892-1:         The UV-C emitter is a low pressure mercury lamp with a quartz envelope having a continuous spectral irradiance of 10 W/m2 at 254 nm       Subclause 5.1.6.1 and Table 1 are not applicable         The black-panel temperature shall be 63 °C +/-       Subclause 5.1.6.1       Subclause 5.1.6.1	N/A N/A N/A N/A N/A
5.1.6	UV-C RADIATION EFFECT ON NON-METALLIC MATERIALS         Requirements for non-metallic materials subject to direct or reflected UV-C radiation exposure and whose mechanical and electrical properties are relied upon for compliance with the         Does not apply to glass, ceramic and similar materials         Tested as specified in ISO 4892-1 and ISO 4892-2, with the following modifications:         Modifications to ISO 4892-1:         The UV-C emitter is a low pressure mercury lamp with a quartz envelope having a continuous spectral irradiance of 10 W/m2 at 254 nm         Subclause 5.1.6.1 and Table 1 are not applicable         The black-panel temperature shall be 63 °C +/- 3 °C         Humidification of the chamber air is specified in part	N/A N/A N/A N/A N/A N/A
5.1.6 5.2.4 5.3.1 9	UV-C RADIATION EFFECT ON NON-METALLIC MATERIALS         Requirements for non-metallic materials subject to direct or reflected UV-C radiation exposure and whose mechanical and electrical properties are relied upon for compliance with the         Does not apply to glass, ceramic and similar materials         Tested as specified in ISO 4892-1 and ISO 4892-2, with the following modifications:         Modifications to ISO 4892-1:         The UV-C emitter is a low pressure mercury lamp with a quartz envelope having a continuous spectral irradiance of 10 W/m2 at 254 nm         Subclause 5.1.6.1 and Table 1 are not applicable         The black-panel temperature shall be 63 °C +/-3 °C         Humidification of the chamber air is specified in part 2 when necessary	N/A           N/A







# RET

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	Ten samples of internal wiring is tested		N/A
7.2	The specimens are attached to the specimen holders such that they are not subject to any stress	RET	N/A
7.3	Apparatus prepared as specified	$\bigcirc$	N/A
	The test specimens and, if used, the irradiance- measuring instrument are exposed for 1 000 h		N/A
7.4	If used, a radiometer is mounted and calibrated such that it measures the irradiance at the exposed surface of the test specimen	RET	N/A
7.5	Material properties and test methods for parts providing mechanical support or impact resistance as specified in Table T.1		N/A
-	Material properties and test method for electrical insulation of internal wiring as specified in Table T.2		N/A
8	This clause is not applicable		N/A





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10.1	TABLE: Powe	r input deviatio	n (ner	(	acar		N/A
Input deviat	ion of/at:	l rated (A)	I measured (A)	dP (A, %)	Required dP (A, %)	Re	emark
Supplement	tary information:	6		0		1	~

Current dev	iation of/at:	I rated (A)	I measured (A)	dl (A, %)	Required dI (A, %)	Remark
100	V, 50Hz	0.8	0.82	+2.50%	+20%	<b>7</b> )
100	V, 60Hz	0.8	0.83	3.75%	+20%	/
240	V, 50Hz	0.8	0.81	+1.25%	+20%	
240	V, 60Hz	0.8	0.82	+2.50%	+20%	

11.8	TABLE: Heating test	, thermocouple measu	rements		Р	
	Test voltage (V)			94/254.4		
	Ambient (°C)		RLT	24.3		
Thermoc	ouple locations	Max. temperature rise measured, dT (K)	Max. temperature rise measured, dT (K)	Max.temperature r dT (K)	ise limit,	
Body sur	face of Cover material	8.5	8.5	For reference	e	
Body surface of Massage head		13.7	13.9	For reference	e	
Body surface of Protector of motor		6.0	6.4	For reference	e	
Body sur	face of Toothed gear	2.1	2.3	For reference	e	
Adapter	ACT	7.2	7.7	For reference	ce	
Internal	wire	7.0	7.9	55		
PCB for	motor	9.3	9.6	105		
Body sur	face of Motor	12.0	12.7	For reference	e	
Body su	rface of C1	8.4	8.9	80	0	
Enclosu	re (RCT)	2.2	2.6	60	RCT	
Body sur	face of Plastic case	1.4	1.8	For reference	e	
Body sur	face of Black wire	2.0	2.4	For reference	e	
Test cor	ner	1.1	1.4	65		
Test floo	or	0.5	0.6	65		
Supplem	entary information:	(RCT)	(RET)	RET	)	
	$\sim$ $\sim$				6	







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Clause	Requirement + Test	(RLI)	Result - Remark	Verdict

13.2	TABLE: Leakage current	_		Р
- mar	Heating appliances: 1.15 x rated input (W)	art		
2	Motor-operated and combined appliances: 1.06 x rated voltage (V):	255		
Leakage	current between	I (mA)	Max. allowe	ed I (mA)
Live part	to enclosure	0.035	0.5	
Suppleme	entary information:			
L		~ /		1

13.3 TABLE: Electric strength	TABLE: Electric strength						
Test voltage applied between:	Voltage (V)	Breakdown (Yes/No)					
Live parts to plastic enclosure	500V	NO					
Live parts to accessible metal part	500V	NO					
Live parts(with adapter) to accessible metal part	3000V	NO	2				
Supplementary information:	RET						

14	TABLE: Transient	overvoltages					N/A
Clearance	between:	CI (mm)	Required Cl (mm)	Rated impulse voltage (V)	Impulse test voltage (V)		ashover Yes/No)
		- (~	·)			5	
Suppleme	ntary information:						

16.2	TABLE: Leakage current			Р
(	Single phase appliances: 1.06 x rated voltage (V)	255	$\bigcirc$	
$\bigcirc$	Three phase appliances 1.06 x rated voltage divided by $\sqrt{3}$ (V):	1		
Leakage c	urrent between	I (mA)	Max. allowe	ed I (mA)
Live part t	o enclosure	0.035	0.5	
	ntary information:	1 0.000	0.0	

16.3	TABLE: Electric strength	(RET)	(RET)	RPT
Test voltage	e applied between:		Voltage (V)	Breakdown (Yes/No)
Live parts t	o plastic enclosure	_	500V	NO
Live parts t	o accessible metal part		500V	NO
Live parts(\	with adapter) to accessible me	etal part	3000V	NO
Supplement	tary information:			







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17 TABLE: Overload protection, thermocouple measurements						
Temperature rise of part/at: dT (K) Max. dT						
-)		Care -				
Supplemen	tary information:					

lementary information:

RCT'

17	TABLE: Overload p	rotection, resi	d (pcr)		N/A	
	Test voltage (V)			$\bigcirc$	<u></u>	
	Ambient, t1 (°C)		:			
-	Ambient, t2 (°C)		:	1		
Temperatu	re of winding	R1 (Ω)	R2 (Ω)	dT (K)	T (°C)	Max. T (°C)
~		<u> </u>		/	$\sum$	

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19	Abnormal o	peration c	onditior	IS				P
Operational	characteristics	6	YES/NO Operational conditions					
	ectronic circuit ppliance oper		YES					<u> </u>
Are there "off" or "stand-by" position?		"	NO	-7-)	-	RET	6	PET
	ded operation sults in dange		NO			O	2	$\mathcal{O}$
Sub-clause	Operating conditions description	Test results descriptic	des	PEC	EMP 19.11.4	Software type required	19.11.3 PEC	Final result
19.2	N.A	N.A	N./	A	N.A	N.A	N.A	N.A
19.3	N.A	N.A	N./	A	N.A	N.A	N.A	N.A
19.4	N.A	N.A	N./	A ()	N.A	N.A	N.A	N.A
19.5	N.A	N.A	N./	1 (	N.A	N.A	N.A	N.A
19.6	N.A	N.A	N./	٩	N.A	N.A	N.A	N.A
19.7	N.A	N.A	N./	1	N.A	N.A	N.A	N.A
19.8	N.A	N.A	N./	CT	N.A	N.A	N.A	N.A
19.9	N.A	N.A	N./		N.A	N.A	N.A	N.A
19.10	N.A	N.A	N./	A	N.A	N.A	N.A	N.A
19.11.2	Test on b), c), d)	No hazard	N./	A	N.A	N.A	N.A	N.A
19.11.4.8	N.A	N.A	N./	A	N.A	N.A	N.A	N.A
19.10X	N.A	N.A	N./	<u> </u>	N.A	N.A	N.A	N.A

Supplementary information:

RCT'

arr					(arr)		Δ		
19.7	TABLE: Abnormal operation, locked rotor/moving parts								
	Test voltage (V)	Test voltage (V)							
	Ambient, t1 (°C)		24.6			_			
· )	Ambient, t2 (°C)		:	RE	24.5				
Temperatu	re of winding	R1 (Ω)	R2 (Ω)	dT (K)	T (°C)	Ma	ax. T (°C)		
Motor enclosure				35.5		-			
Supplemer	ntary information:	$\frown$		$\frown$	1	-			
	1000 - 000 - 100 - F	(manar)		man mar			-		







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Clause	Requirement + Test	(RLI)	Result - Remark	Verdict

19.9	TABLE: Abnorma	TABLE: Abnormal operation, running overload						
	Test voltage (V)	Test voltage (V):						
2	Ambient, t1 (°C)		6	-				
	Ambient, t2 (°C)		:					
Tempera	ture of winding	R1 (Ω)	R2 (Ω)	dT (K)	T (°C)	Ma	ax. T (°C)	
	(RET)	RET	(RET)		R	<b>:7</b> -)		
Supplem	entary information:	$\bigcirc$		$\bigcirc$		1		

19.13 TABLE: Abnormal operation, temperature rises						
Thermocouple locations	Max. temperature rise measured, dT (K)	Max.temperature ri dT (K)	se limit,			

Supplementary information:

(LT)		RET		RET	RET	
24.1	ТАВ	LE: Components in	nformation	$\bigcirc$	$\bigcirc$	P
Object / part	No.	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity <sup>1</sup> )
1. Adpater fo CE	r (	Xiamen Invcy Electronics Co., Ltd	IVP1200- 2500G	Input: AC 100-240V, 50/60Hz, 0.8A; Output: DC 12V, 2.5A, Class II	EN 61558-1 EN 61558-2-16	S 50426448
alternative	1	DONGGUAN SUNUN POWER CO.,LTD	SC24H- 120250V	Input: AC 100-240V, 50/60Hz, 0.8A; Output: DC 12V, 2.5A,	EN 61558-1 EN 61558-2-16	TUV Rh S 50482487
alternative		Xiamen Xdroid Technology Co., Ltd.	XZ1200- 2500G	Input: AC 100-240V, 50/60Hz, 1A; Output: DC 12V, 2.5A, Class II	EN 61558-1 EN 61558-2-16	TUV R 50525287
alternative		Xiamen Xunheng Electronics Tech Co., Ltd	XH1200- 2500WG	INPUT: 100-240VAC, 50/60Hz, 0.8A; OUTPUT: 12.0V, 2.5A	EN 61558-1 EN 61558-2-16	AN 50478935 0001
2. Motor		FENGHUI MICRO-MOTOR IND LTD	ZYT3422D 012	DC 12V, Class E	EN 60335-1	Test with appliance
3. Relay	E	Zhejiang HKE Relay Co., Ltd.	HRS4H-S- DC12V	AC 250V, 10A, T105	EN 61810-1	TUV Rh R50116136
alternative	-	Ningbo Songle Relay Co., Ltd.	SRD- 12VDC-SL- C	AC 250V, 10A, T85	EN 61810-1	TUV Rh R50056114







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4. PTC	SHENZHEN JINKE SPECIAL	JK30-185	30V, 1.85A	EN60738	E217453
<b>T</b> )	MATERIALS CO LTD	R	<b>CT</b> ) ((	RCT)	RE
alternative	SHENZHEN WONDHOPE ELECTRIC CO LTD	WH30- 185	30V, 1.85A	EN60738	E245085
alternative	SHENZHEN GUANRUIDA ELECTRONIC TECHNOLOGY CO LTD	GR30-185	30V, 1.85A	EN60738	E339514
5. Cover material	ZHEN JIANG CHI MEI CHEMICAL CO LTD	D-190	ABS RET	EN 60335-1	UL E194560 and tested with appliance
6. Massage head material	YUNNAN YUNTIANHUA CO LTD	M90	POM	EN 60335-1	UL E242659 and tested with appliance
7. Protector of motor	Changzhou Changhong Tongli Electric Appliance Co. Ltd.	KW-A2	AC 250V, 85 °C	EN 60730-1 EN 60730-2-2	VDE 40020906
alternative	Foshan Ji Hui Electrical Appliance Co., Ltd.	BW-ABJ	AC 250V, 85 °C	EN 60730-1 EN 60730-2- 2	VDE 40019595
alternative	Foshan heshuo metal electrical appliance co.,ltd	BW-DCM	AC 250V, 85 °C	EN 60730-1 EN 60730-2- 2	VDE 40036413
8. Internal wire	XINYA ELECTRONIC CO LTD	1007 1015 2464 2468	20-22AWG 300V 80℃ 18-20AWG 600V 105℃ 20-24AWG 300V 80℃ 22-26AWG 300V 80℃	ANSI/UL 758	UL/E170689

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alternative	XIAMEN TIANXI INDUSTRIAL CO LTD	2468 2464 1007 1015	22-26AWG, 80℃, 300V 20-24AWG, 80℃, 300V 20-22AWG, 80℃, 300V 18-20AWG, 105℃, 600V	UL758	UL/E5074
	RUNFA (XIAMEN) CABLE CO LTD	1007 1015 2464 2468	20-22AWG 300V 80°C 18-20AWG 600V 105°C 20-24AWG 300V 80°C 22-26AWG 300V 80°C	ANSI/UL 758	UL/E3109
alternative	Xiamen Seebest Wire & Cable Co Ltd	2468 2464 1007 1015	22-26AWG, 80℃, 300V 20-24AWG, 80℃, 300V 20-22AWG, 80℃, 300V 18-20AWG, 105℃, 600V	UL758	E520447
	Xiamen Runjie Industry and Trade Co Ltd	2468 2464 1007 1015	22-26AWG, 80℃, 300V 20-24AWG, 80℃, 300V 20-22AWG, 80℃, 300V 18-20AWG, 105℃, 600V	UL758	E523982
alternative	HUIZHOU LEYSEN CABLE TECHNOLOGY CO LTD	2464 1007 1015	20-24AWG, 80℃, 300V 20-22AWG, 80℃, 300V 18-20AWG, 105℃, 600V	UL758	E518933

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						1	
alter	native	XIAMEN XIN CHENC DA ELECTRIC CO LTD	1007 1015 2464 2468	20-22AWG 80℃ 18-20AWG 105℃ 20-24AWG 80℃ 22-26AWG 80℃	600∨ 300∨	ANSI/UL 758	UL/E322113
alter	RET	XIAMEN YIHETAI CABLE CO LTD	1007 1015 2464 2468	20-22AWG 80℃ 18-20AWG 105℃ 20-24AWG 80℃ 22-26AWG 80℃	600∨ 300∨	ANSI/UL 758	UL/E241406
alter	native	XIAMEN ZHENZHEN ELECTRONIC TECHNOLOGY CO LTD	1007 1015 2464 2468	20-22AWG 18-20AWG 20-24AWG 22-26AWG	<b>600V 105</b> ℃ 300V 80℃	ANSI/UL 758	UL/E470000
alter	native	RUNFA (XIAMEN) CABLE CO LTD	2468 2464 1007 1015	22-26AWG, 300V 20-24AWG, 300V 20-22AWG, 300V 18-20AWG, 600V	80℃, 80℃,	UL758	E310967
	ontrol PWB, I PWB,	KINGBOARD LAMINATES (MACA COMMERCIAL OFFSHORE) LTD	KB-2150	94V -0, 105	°C	ANSI/UL 94	UL/E123995
alter	native	WUPINGHONGXI ANG PCB TECHNOLOGY CO LTD	WPHX- 8/WPHX-6	94V -0, 130	°C	ANSI/UL 796	UL/E353226
alter	native	SHANDONG JINBAO ELECTRONICS CO LTD	ZD-90F	94V -0, 130	î RET	ANSI/UL 94	UL/E141940







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Clause	Requirement + Test	RL I	Result - Remark	Verdict

alternative	DONGGUAN HUAXING CIRCUIT BOARD FACTORY	HX-002	94V -0, 105℃	ANSI/UL 796	UL/E230194
alternative	JIANGXI YONGZHAO EIECTRONICS CO LTD	CHT-1	94V -0, 130°C	ANSI/UL 94	UL/E336650
alternative	LONGYAN DUZIJ CIRCUIT TECHNOLOGY CO LTD	DZJ-2	94V-0; 130℃	ANSI/UL 94	UL/E330637
alternative	XIAMEN XINAN TAIFA INDUSTRY CO LTD	ATF-04	94V -0, 130℃	ANSI/UL 94	UL/E201516
Supplementary ir <sup>1</sup> ) Provided evide		eed level of c	ompliance. See OD-CB2	039.	R

28.1	TABLE: Thread	ed part torque test	$\cap$	P
Threaded pa	art identification	Diameter of thread (mm)	Column number (I, II, or III)	Applied torque (Nm)
Fixed enclo	ousre	2.9	I	0.5
Fixed PCB		2.3		0.4
Supplement	tary information:	art	art	DET

29.1	TABLE: Cleara	ances				N/A		
$\sim$	Overvoltage c	ategory	••••••	:	-	_		
	Type of insulation:							
Rated impulse voltage (V):	Min. cl (mm)	Basic (mm)	Supplementary (mm)	Reinforced (mm)	Functional (mm)	Verdict / Remark		
330	0,2* / 0,5 / 0,8**	)	RET	RET		RET		
500	0,2* / 0,5 / 0,8**							
800	0,2* / 0,5 / 0,8**	R	CT)	RET	RE	T		
1 500	0,5 / 0,8** / 1,0***	1		$\bigcirc$				





		UL 60335-1		
Clause	Requirement + Test	(RLI)	Result - Remark	Verdict

	and any informati			1	
10 000	11,0 / 11,5***		$\frown$	$\frown$	
8 000	8,0 / 8,5***				
6 000	5,5 / 6,0***	)	( in the second	( Charles )	luce
4 000	3,0 / 3,5***	-	(arr)	art	(ar
2 500	1,5 / 2,0***			(	

Supplementary information:

\*) For tracks on printed circuit boards if pollution degree 1 and 2
\*\*) For pollution degree 3
\*\*\*) If the construction is affected by wear, distortion, movement of the parts or during assembly

Working voltage (V)				eepage dis (mm) ollution de							
	1		2			3		Туре	of insu	lation	
		Ma	aterial g	roup	Ма	aterial g	roup				
		Ι	Ш	IIIa/IIIb	Ι	Ш	IIIa/IIIb*)	B**)	S**)	R**)	Verdict
≤50	0,18	0,6	0,85	1,2	1,5	1,7	1,9		—	—	1
≤50	0,18	0,6	0,85	1,2	1,5	1,7	1,9			—	CT)
≤50	0,36	1,2	1,7	2,4	3,0	3,4	3,8			1	
125	0,28	0,75	1,05	1,5	1,9	2,1	2,4			—	
125	0,28	0,75	1,05	1,5	1,9	2,1	2,4		1	—	
125	0,56	1,5	2,1	3,0	3,8	4,2	4,8		—	<b>7</b> )	
250	0,56	1,25	1,8	2,5	3,2	3,6	4,0			_	
250	0,56	1,25	1,8	2,5	3,2	3,6	4,0			_	
250	1,12	2,5	3,6	5,0	6,4	7,2	8,0				-/
400	1,0	2,0	2,8	4,0	5,0	5,6	6,3	C		_	- (
400	1,0	2,0	2,8	4,0	5,0	5,6	6,3				
400	2,0	4,0	5,6	8,0	10,0	11,2	12,6				
500	1,3	2,5	3,6	5,0	6,3	7,1	8,0	1		_	RET
500	1,3	2,5	3,6	5,0	6,3	7,1	8,0			—	-
500	2,6	5,0	7,2	10,0	12,6	14,2	16,0		—		
>630 and ≤800	1,8	3,2	4,5	6,3	8,0	9,0	10,0				
>630 and ≤800	1,8	3,2	4,5	6,3	8,0	9,0	10,0		(	—	) —
>630 and ≤800	3,6	6,4	9,0	12,6	16,0	18,0	20,0		—	$\sim$	
>800 and ≤1000	2,4	4,0	5,6	8,0	10,0	11,0	12,5			_	

(per)		an	2	UL 60	)335-1			6	(mark)		
Clause Require	ment +	Test	9		KL	Re	sult - Rem	ark	5		Verdict
>800 and ≤1000	2,4	4,0	5,6	8,0	10,0	11,0	12,5				
>800 and ≤1000	4,8	8,0	11,2	16,0	20,0	22,0	25,0			-	-
>1000 and ≤1000 >1000 and ≤1250	3,2	5,0	7,1	10,0	12,5	14,0	16,0	-			RE
>1000 and $\leq 1250$ >1000 and $\leq 1250$	3,2	5,0	7,1	10,0	12,5	14,0	16,0			-	
	6,4	10,0	14,2	20,0	25,0	28,0	32,0				
>1000 and ≤1250	4,2	-					20,0				-
>1250 and ≤1600	/	6,3	9,0	12,5	16,0	18,0					1
>1250 and ≤1600	4,2	6,3	9,0	12,5	16,0	18,0	20,0			-	<u> </u>
>1250 and ≤1600	8,4	12,6	18,0	25,0	32,0	36,0	40,0				-
>1600 and ≤2000	5,6	8,0	11,0	16,0	20,0	22,0	25,0	/			
>1600 and ≤2000	5,6	8,0	11,0	16,0	20,0	22,0	25,0		RL I	<u> </u>	
>1600 and ≤2000	11,2	16,0	22,0	32,0	40,0	44,0	50,0	—			-
>2000 and ≤2500	7,5	10,0	14,0	20,0	25,0	28,0	32,0	-	—		-
>2000 and ≤2500	7,5	10,0	14,0	20,0	25,0	28,0	32,0				
>2000 and ≤2500	15,0	20,0	28,0	40,0	50,0	56,0	64,0	—			_
>2500 and ≤3200	10,0	12,5	18,0	25,0	32,0	36,0	40,0				-
>2500 and ≤3200	10,0	12,5	18,0	25,0	32,0	36,0	40,0				~
>2500 and ≤3200	20,0	25,0	36,0	50,0	64,0	72,0	80,0			(A	CT-)
>3200 and ≤4000	12,5	16,0	22,0	32,0	40,0	45,0	50,0				
>3200 and ≤4000	12,5	16,0	22,0	32,0	40,0	45,0	50,0				-
>3200 and ≤4000	25,0	32,0	44,0	64,0	80,0	90,0	100,0			2	_
>4000 and ≤5000	16,0	20,0	28,0	40,0	50,0	56,0	63,0				_
>4000 and ≤5000	16,0	20,0	28,0	40,0	50,0	56,0	63,0		1	_	_
>4000 and ≤5000	32,0	40,0	56,0	80,0	100,0	112,0	126,0				
>5000 and ≤6300	20,0	25,0	36,0	50,0	63,0	71,0	80,0	ar		_	-
>5000 and ≤6300	20,0	25,0	36,0	50,0	63,0	71,0	80,0	_	/		_
>5000 and ≤6300	40,0	50,0	72,0	100,0	126,0	142,0	160,0				
>6300 and ≤8000	25,0	32,0	45,0	63,0	80,0	90,0	100,0			-	
>6300 and ≤8000	25,0	32,0	45,0	63,0	80,0	90,0	100,0	_		—	RET
>6300 and ≤8000	50,0	64,0	90,0	126,0	160,0	180,0	200,0				
8000 and ≤10000	32,0	40,0	56,0	80,0	100,0	110,0	125,0			_	
>8000 and ≤10000	32,0	40,0	56,0	80,0	100,0	110,0	125,0		1	_	_
>8000 and ≤10000	64,0	80,0	112,0	160,0	200,0	220,0	250,0			- 1	
10000 and ≤12500	40,0	50,0	71,0	100,0	125,0	140,0	160,0				

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>10000 and ≤12500	40,0	50,0	71,0	100,0	125,0	140,0	160,0		 _
>10000 and ≤12500	80,0	100,0	142,0	200,0	250,0	280,0	320,0		

Supplementary information:

\*) Material group IIIb is allowed if the working voltage does not exceed 50 V
\*\*) B = Basic insulation, S = Supplementary insulation, R = Reinforced insulation

29.2 **TABLE:** Creepage distances, functional insulation Working voltage **Creepage distance** (V) (mm) **Pollution degree** 2 1 3 Material group Material group Ш Illa/IIIb L II Illa/IIIb\* Verdict / L Remark 0,08 0,4 0,4 0,4 1,0 1,0 1,0 ≤10 ---50 0,16 0,56 1,4 0,8 1,1 1,6 1,8 ---125 0.25 0,71 1,0 1.4 1,8 2.0 2.2 --250 0,42 1,0 1,4 2,0 2,5 2,8 3,2 \_\_\_ 400 0,75 1.6 2,2 3.2 4.0 4.5 5.0 ---500 1,0 2,0 2.8 4,0 5,0 6,3 5,6 ---1,8 3,2 >630 and ≤800 4,5 6,3 8,0 9,0 10,0 --2,4 4,0 5,6 8,0 10.0 11,0 12,5 >800 and ≤1000 ---3,2 5,0 7,1 10,0 12,5 14,0 16,0 >1000 and ≤1250 ---4,2 12,5 6,3 9,0 16,0 18,0 20,0 >1250 and ≤1600 --->1600 and ≤2000 5,6 8,0 11.0 16,0 20,0 22.0 25,0 --->2000 and ≤2500 7,5 10,0 14,0 20,0 25,0 28,0 32,0 ---12,5 >2500 and ≤3200 10.0 18.0 25.0 32.0 36.0 40.0 \_\_\_ >3200 and ≤4000 12,5 16,0 22,0 32,0 40,0 45,0 50,0 ---16,0 20,0 28,0 40,0 50,0 56,0 63,0 >4000 and ≤5000 ---25.0 >5000 and ≤6300 20,0 36.0 50,0 63.0 71.0 80,0 ---25,0 32,0 45.0 80.0 63,0 90.0 100,0 >6300 and ≤8000 \_\_\_ 32,0 40,0 56,0 80,0 100,0 110,0 125,0 >8000 and ≤10000 \_\_\_ 40,0 50,0 100,0 160.0 >10000 and ≤12500 71.0 125,0 140.0 ---Supplementary information: \*) Material group IIIb is allowed if the working voltage does not exceed 50 V





		UL 60335-1		
Clause	Requirement + Test	RLI	Result - Remark	Verdict

30.1	TABLE: Ball Pr	Р					
Allowed impression diameter (mm)					G		
Object/ F	Object/ Part No./ Material Manufacturer/ trademark		Test temper	ature (°C)	Impressio	n diameter (mm)	
Enclosu	ire	Reestar Limited	nternational	75	$\sim$	0.8	$\sim$
РСВ	art		Brt	125	art	0.9	BFT
Supplem	entary information:				U		$\bigcirc$

30.2/30.4 TABLE	: Needle- flame test (	NFT)		$\square$	N/A
Object/ Part No./ Material	Manufacturer/ trademark	Duration of application of test flame (ta); (s)	Ignition of specified layer Yes/No	Duration of burning (tb) (s)	Verdict
-					/
Supplementary info	rmation:				

Supplementary information:

RCT'

NFT not relevant (or applicable) for Parts of material classified as V-0 or V-1 NFT not relevant (or applicable) for Base material of PCBs classified as V-0 or if relevant VTM-0

30.2	TABLE: Resista	nce to hea	at and fir	e - Glow w	vire tests	7.7		P-P	
Object/	Manufacturer		G	low wire t	est (GWT);	; (°C)			
Part No./ Material	1	550	6	50	75	50	050	Verdict	
	trademark	550	te	ti	te	ti	850		
Enclosure	Reestar International Limited	×	r)-		RET		RE	Pass	
PCB								Pass	
DC inlet	Xiamen Xinyitai Electronics Co., Ltd.	7		RET	×	×	CT	Pass	
Motor bobbin	FENGHUI MICRO- MOTOR IND LTD		-	_	Х	×		Pass	
Object/ Part No./	Manufacturer /	Glov		ammability /FI), °C	y index		ion temp. T), °C	Verdict	
Material	trademark	550	650	750	850	675	775		
Enclosure	Reestar International Limited	R	cr)		RET	-) -	- (R	CT)	
РСВ									







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Clause	Requirement + Test	RLT	Result - Remark	Verdict

DC inlet	Xiamen Xinyitai				-		-
	Electronics		(PET)		RET		(Pi
	Co., Ltd.		( )		1		6
Motor	FENGHUI				$\sim$		/
MOLOI	MICRO-						
bobbin	MOTOR						
	IND LTD	-					
The test spe	ecimen passed the g	low wire tes	st (GWT) with r	no ignition [(t	e – ti) ≤ 2s]	(Yes/No):	Yes
If no, then s	urrounding parts pa	ssed the ne	edle-flame test	of annex E	(Yes/No)		
	ecimen passed the to w-wire (Yes/No)?						Yes
Ignition of th	ne specified layer pla	aced undern	eath the test s	pecimen (Ye	es/No)		Yes

Supplementary information:

550 °C GWT not relevant (or applicable) to parts of material classified at least HB40 or if relevant HBF The GWIT pre-selection option, the 850 °C GWFI pre-selection option, and the 850 °C GWT are not relevant (or applicable) for attended appliances.



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